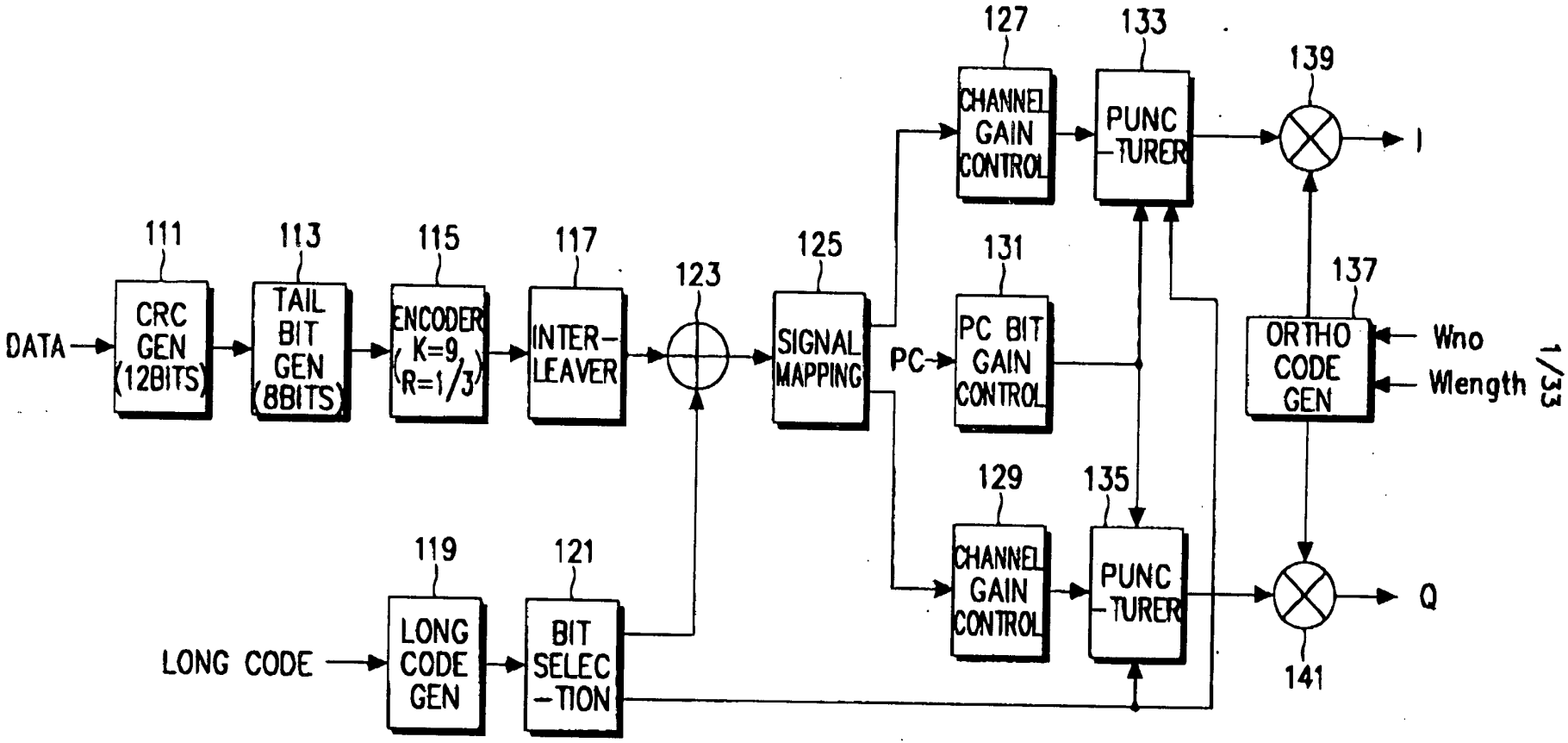

FIG. 1
(Prior Art)

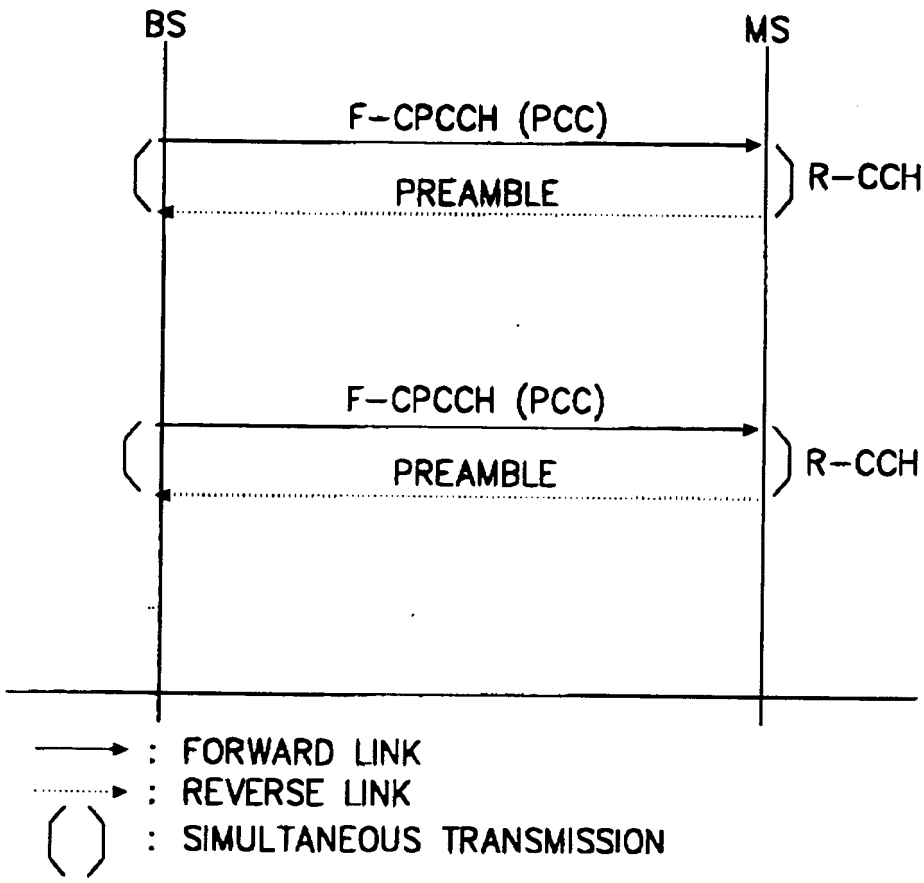
BS
MS
F-CPCCH (PCC)
PREAMBLE
R-CCH
F-CPCCH (PCC)
PREAMBLE
R-CCH
: FORWARD LINK
: REVERSE LINK
: SIMULTANEOUS TRANSMISSION

FIG. 2

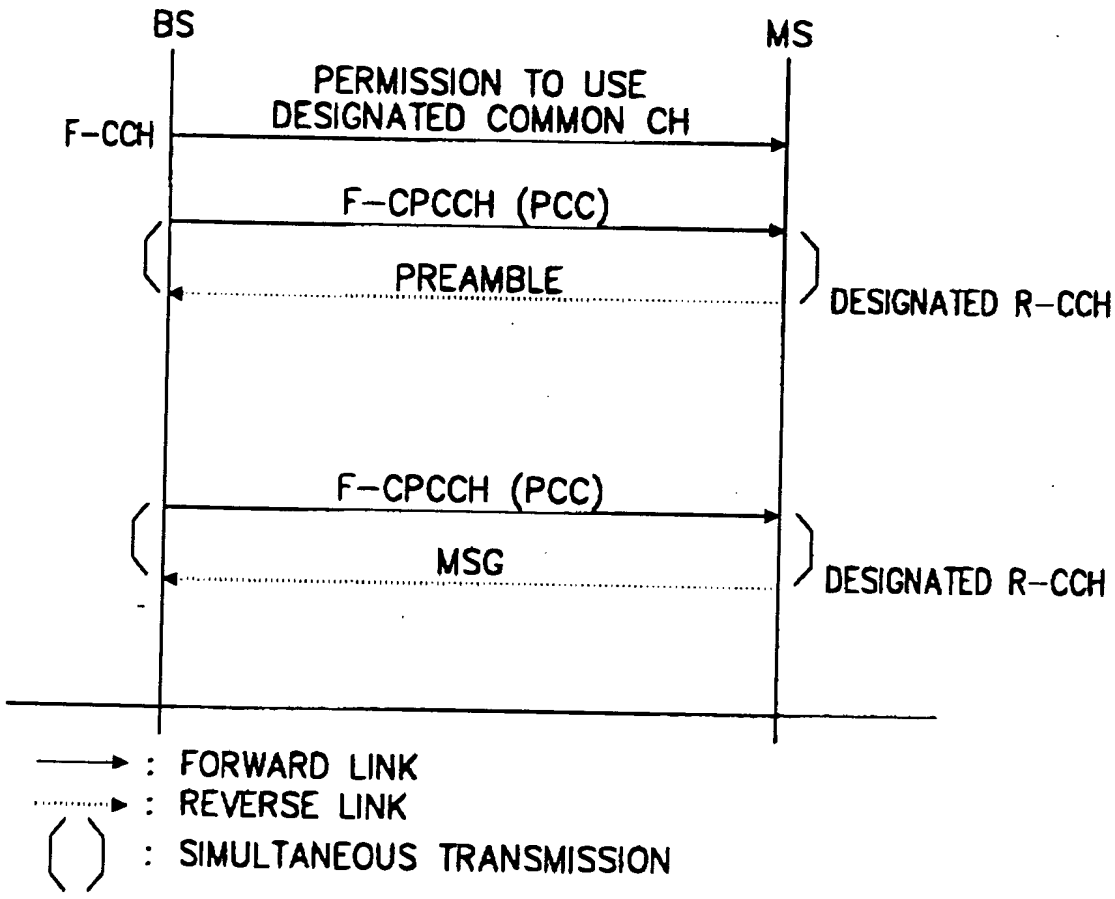
BS
MS
PERMISSION TO USE
DESIGNATED COMMON CH
F-CCH
F-CPCCH (PCC)
PREAMBLE
DESIGNATED R-CCH
F-CPCCH (PCC)
MSG
DESIGNATED R-CCH
: FORWARD LINK
: REVERSE LINK
: SIMULTANEOUS TRANSMISSION

FIG. 3

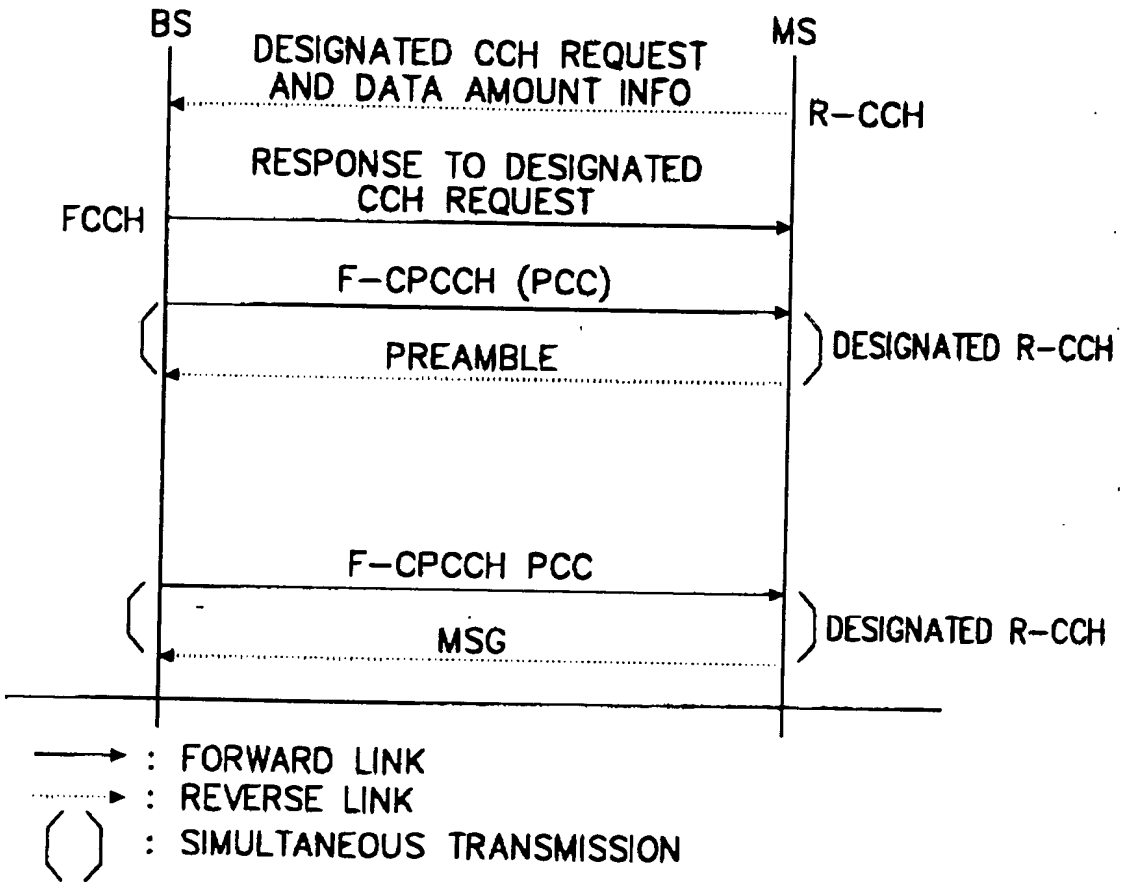
BS
MS
DESIGNATED CCH REQUEST AND DATA AMOUNT INFO
R-CCH
RESPONSE TO DESIGNATED CCH REQUEST
FCCH
F-CPCCH (PCC)
PREAMBLE
DESIGNATED R-CCH
F-CPCCH PCC
MSG
DESIGNATED R-CCH
: FORWARD LINK
: REVERSE LINK
: SIMULTANEOUS TRANSMISSION

FIG. 4

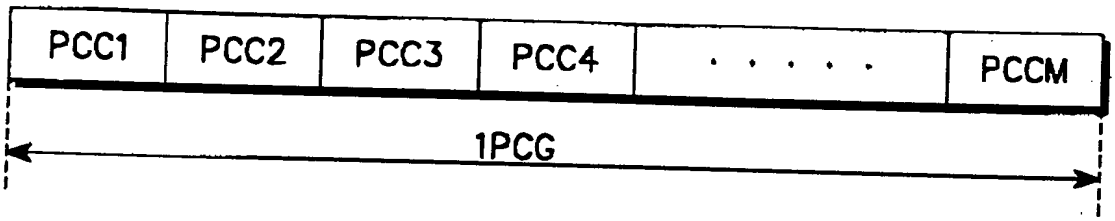
PCC1
PCC2
PCC3
PCC4
PCCM
1PCG

FIG. 5A

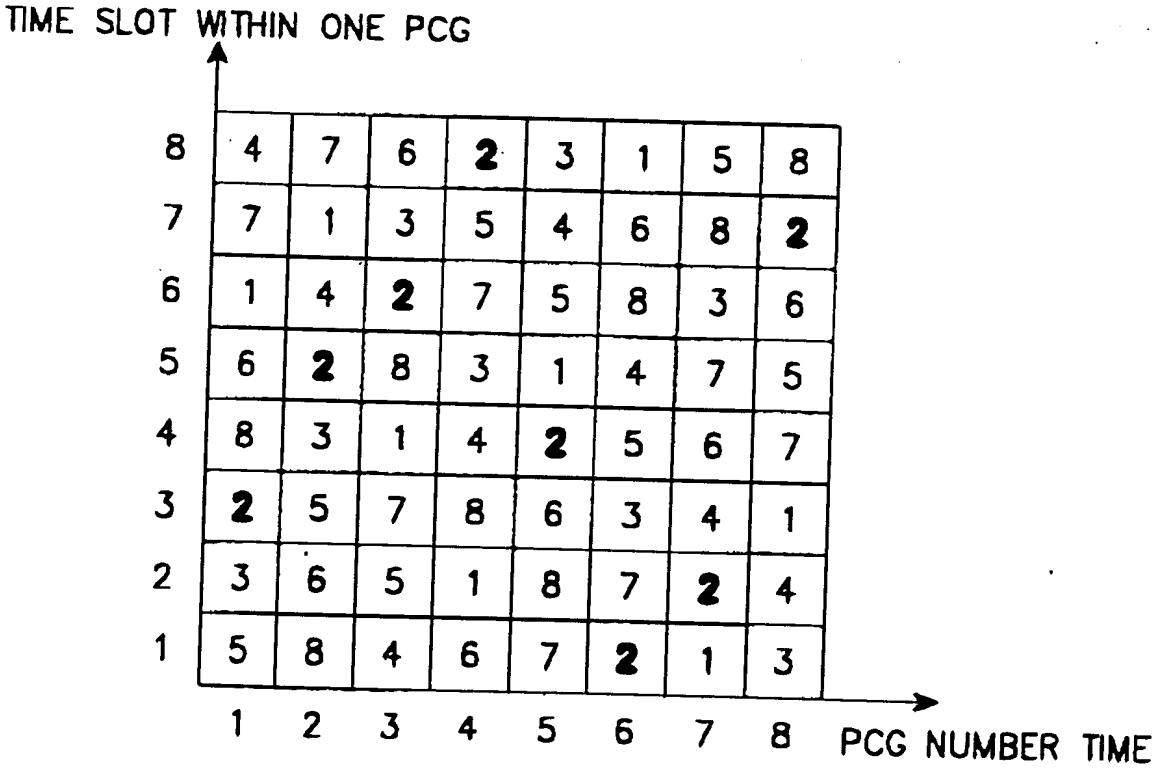
TIME SLOT WITHIN ONE PCG
8 4 7 6 2 3 1 5 8
7 7 1 3 5 4 6 8 2
6 1 4 2 7 5 8 3 6
5 6 2 8 3 1 4 7 5
4 8 3 1 4 2 5 6 7
3 2 5 7 8 6 3 4 1
2 3 6 5 1 8 7 2 4
1 5 8 4 6 7 2 1 3
1 2 3 4 5 6 7 8
PCG NUMBER TIME

FIG. 5B

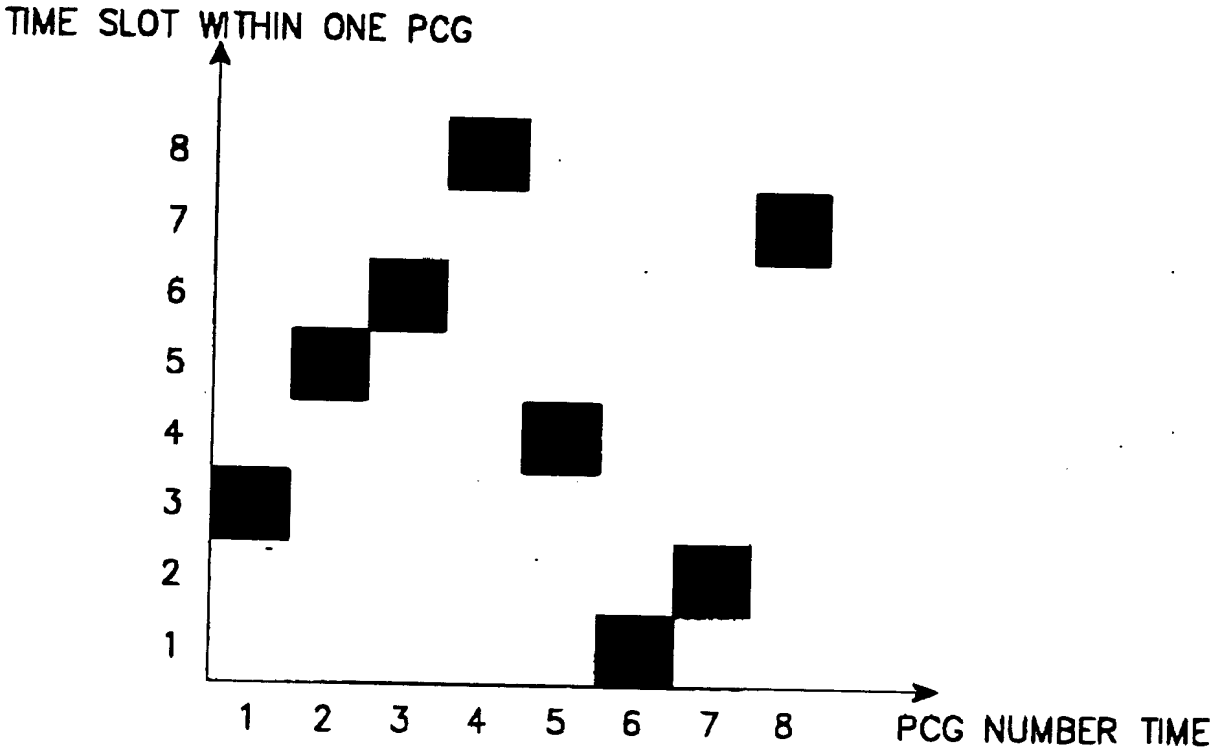

FIG. 5C

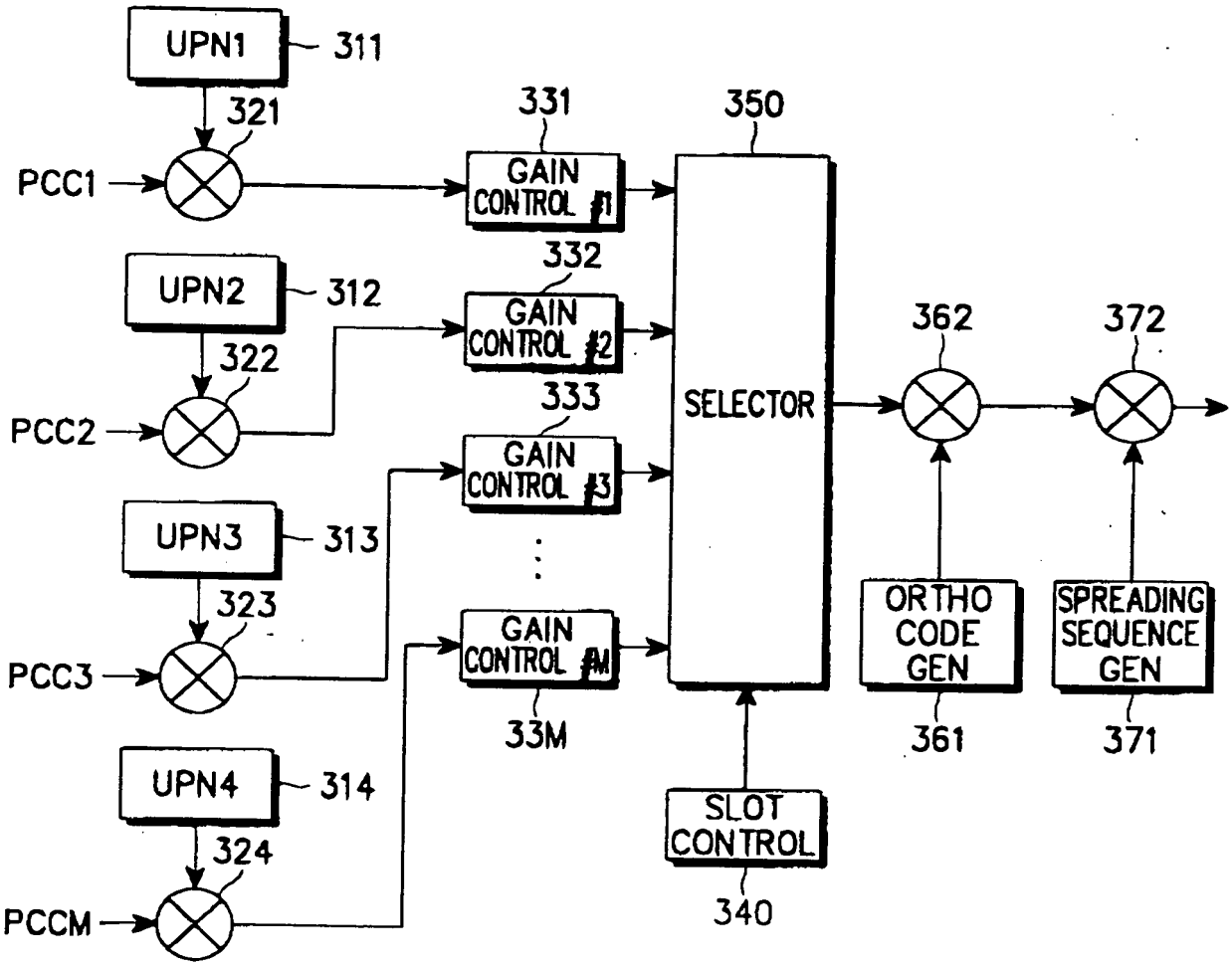
UPN1
311
321
PCC1
331
GAIN CONTROL #1
350
UPN2
312
322
PCC2
332
GAIN CONTROL #2
333
GAIN CONTROL #3
SELECTOR
362
372
UPN3
313
323
PCC3
GAIN CONTROL #M
33M
ORTHO CODE GEN
361
SPREADING SEQUENCE GEN
371
UPN4
314
324
PCCM
SLOT CONTROL
340

FIG. 6

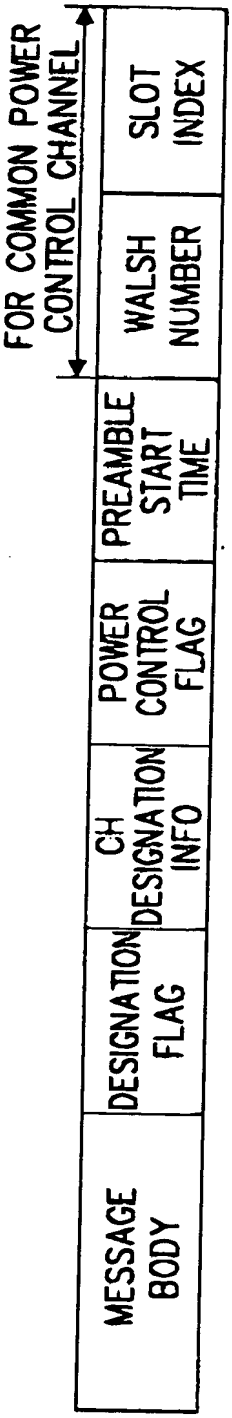
FOR COMMON POWER CONTROL CHANNEL
SLOT INDEX
WALSH NUMBER
PREAMBLE START TIME
POWER CONTROL FLAG
CH DESIGNATION INFO
DESIGNATION FLAG
MESSAGE BODY

FIG. 7

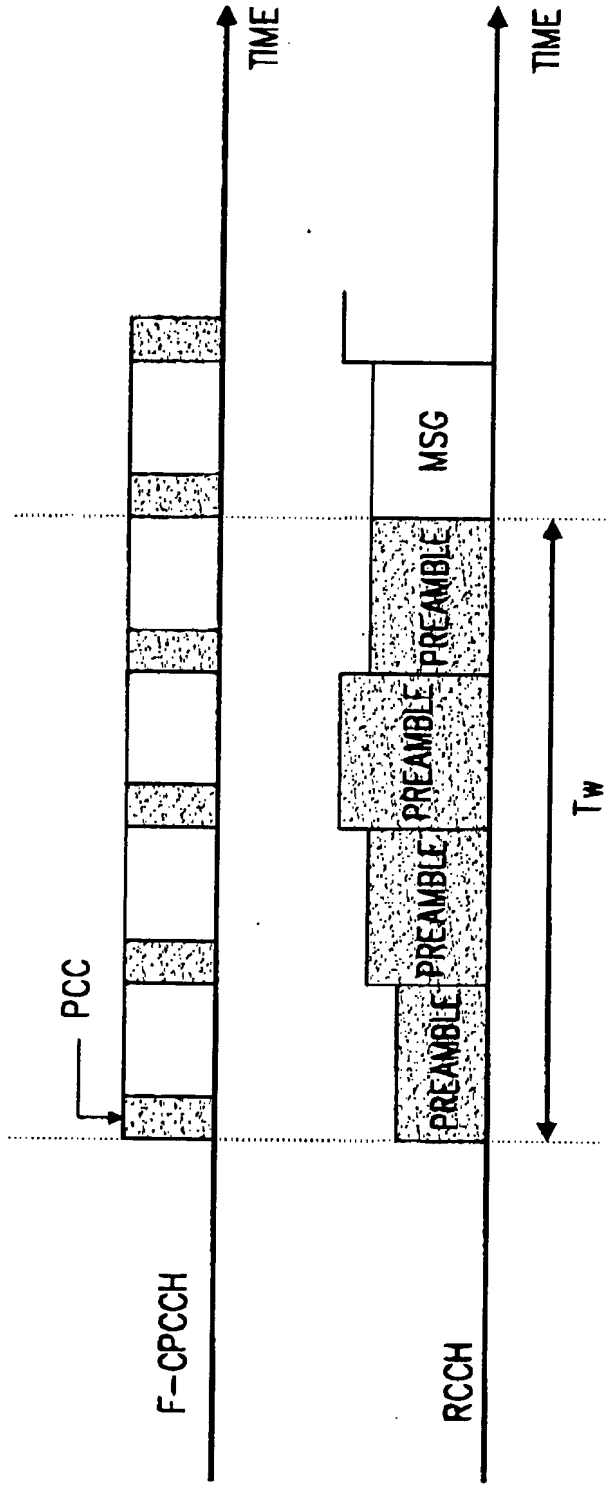
TIME
TIME
PCC
F-CPCCH
RCCH
MSG
PREAMBLE
PREAMBLE
PREAMBLE
PREAMBLE
Tw

FIG. 8A

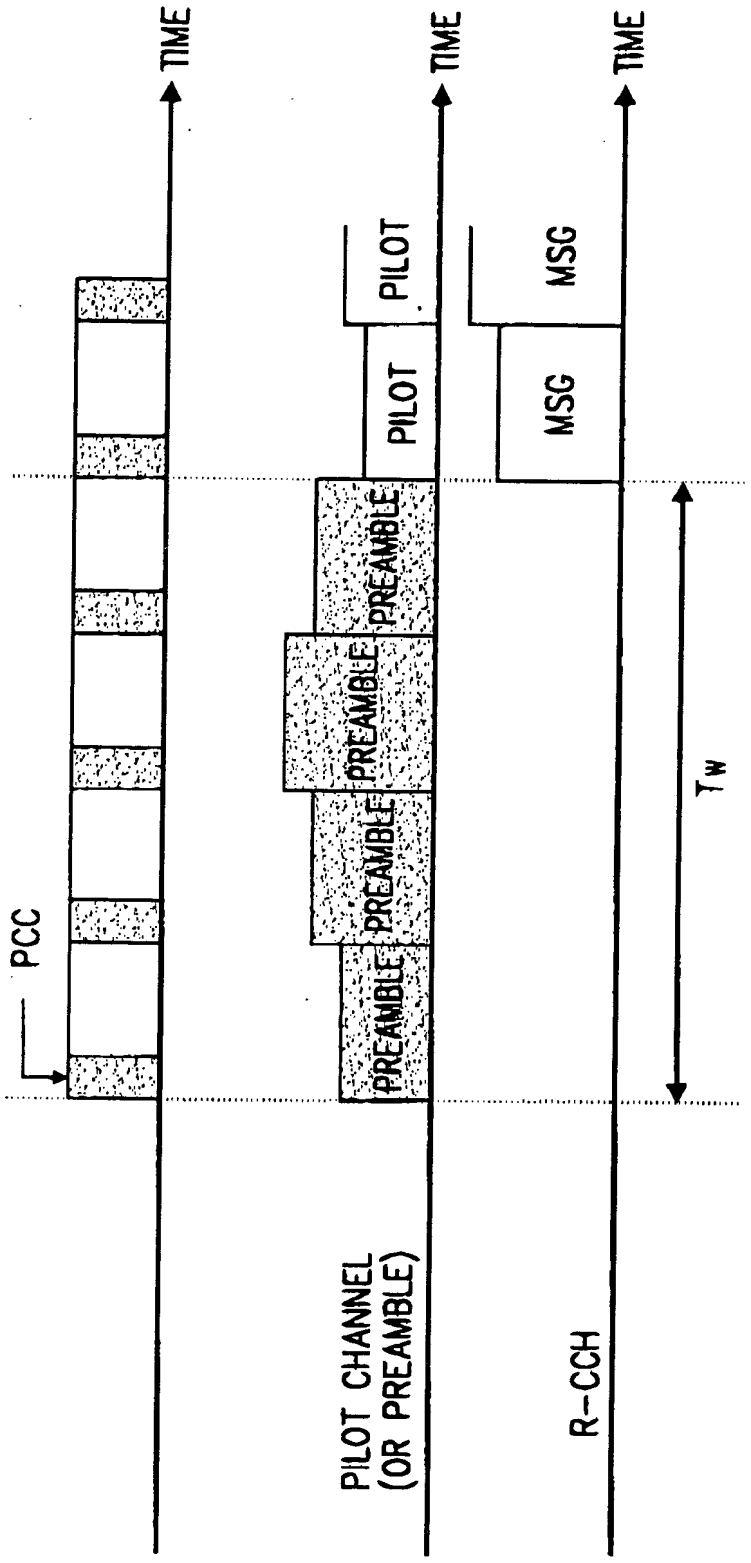
TIME
TIME
TIME
PCC
PREAMBLE
PREAMBLE
PREAMBLE
PILOT
PILOT
MSG
MSG
T_W
PILOT CHANNEL
(OR PREAMBLE)
R-CCH

FIG. 8B

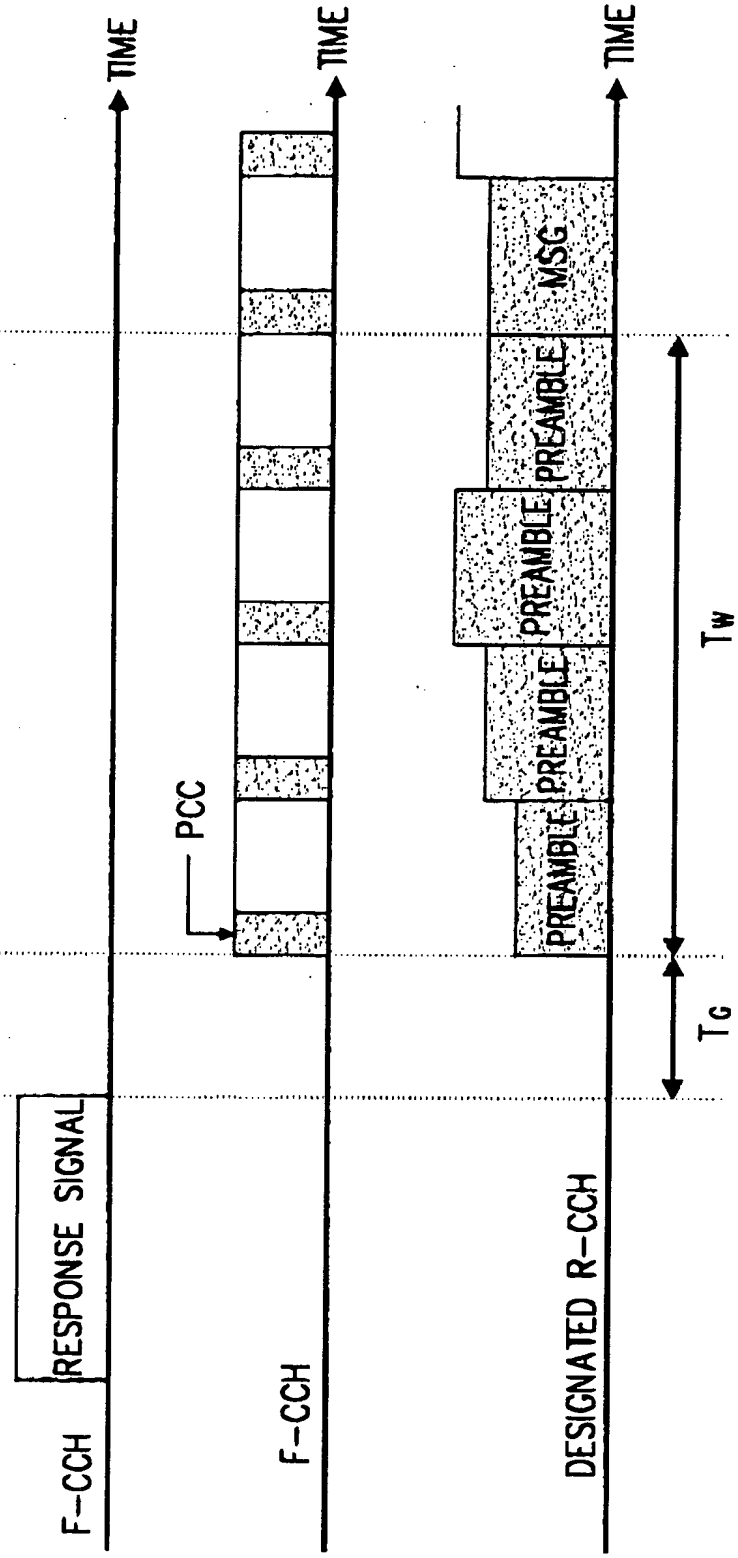
TIME
TIME
TIME
RESPONSE SIGNAL
F-CCH
PCC
F-CCH
PREAMBLE
PREAMBLE
PREAMBLE
MSG
DESIGNATED R-CCH
T_W
T_G

FIG. 9A

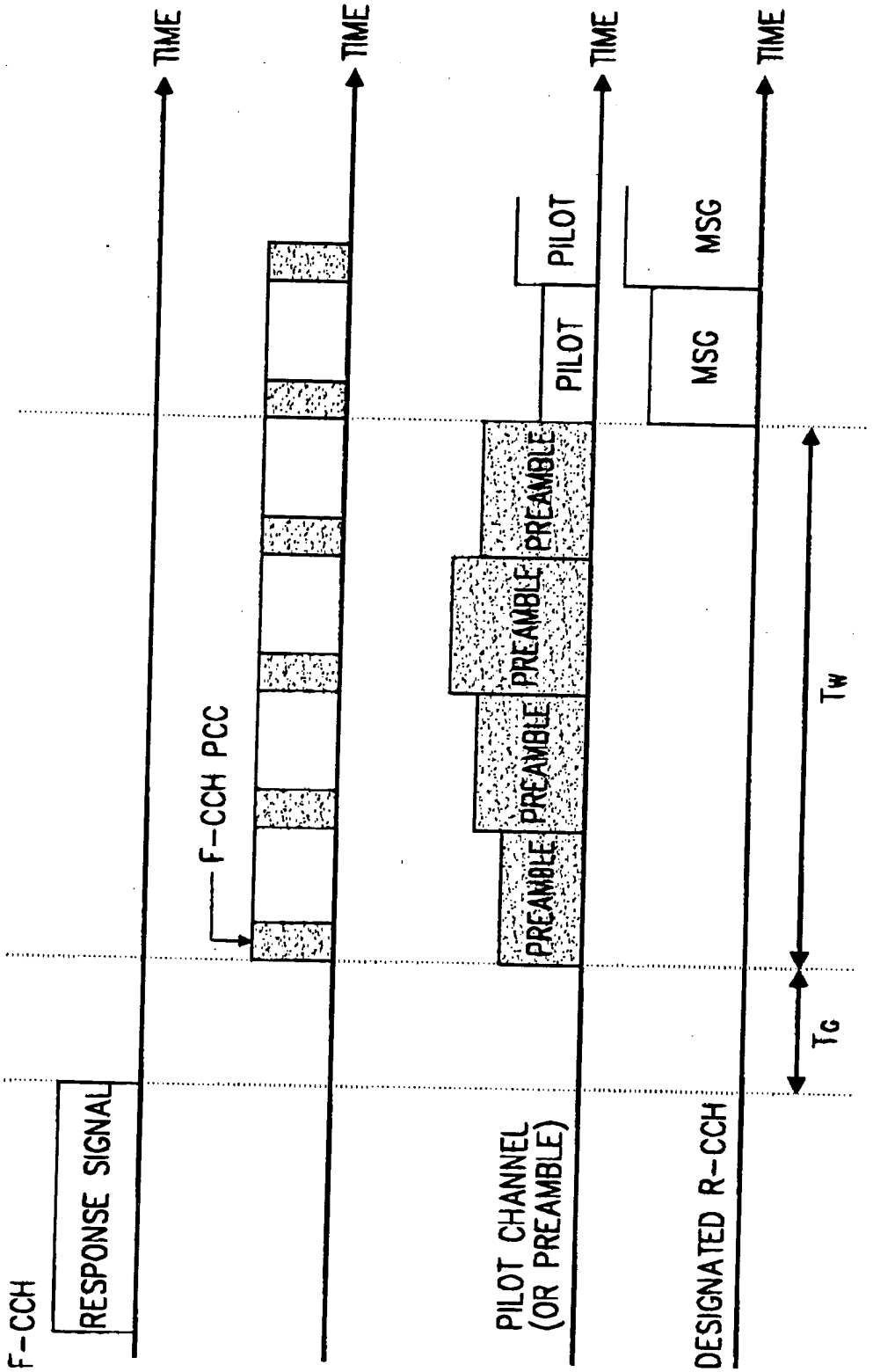
F-CCH
RESPONSE SIGNAL
TIME
F-CCH PCC
TIME
PILOT CHANNEL
(OR PREAMBLE)
PREAMBLE
PREAMBLE
PREAMBLE
PREAMBLE
PILOT
PILOT
TIME
DESIGNATED R-CCH
MSG
MSG
TIME
Tw
Tg

FIG. 9B

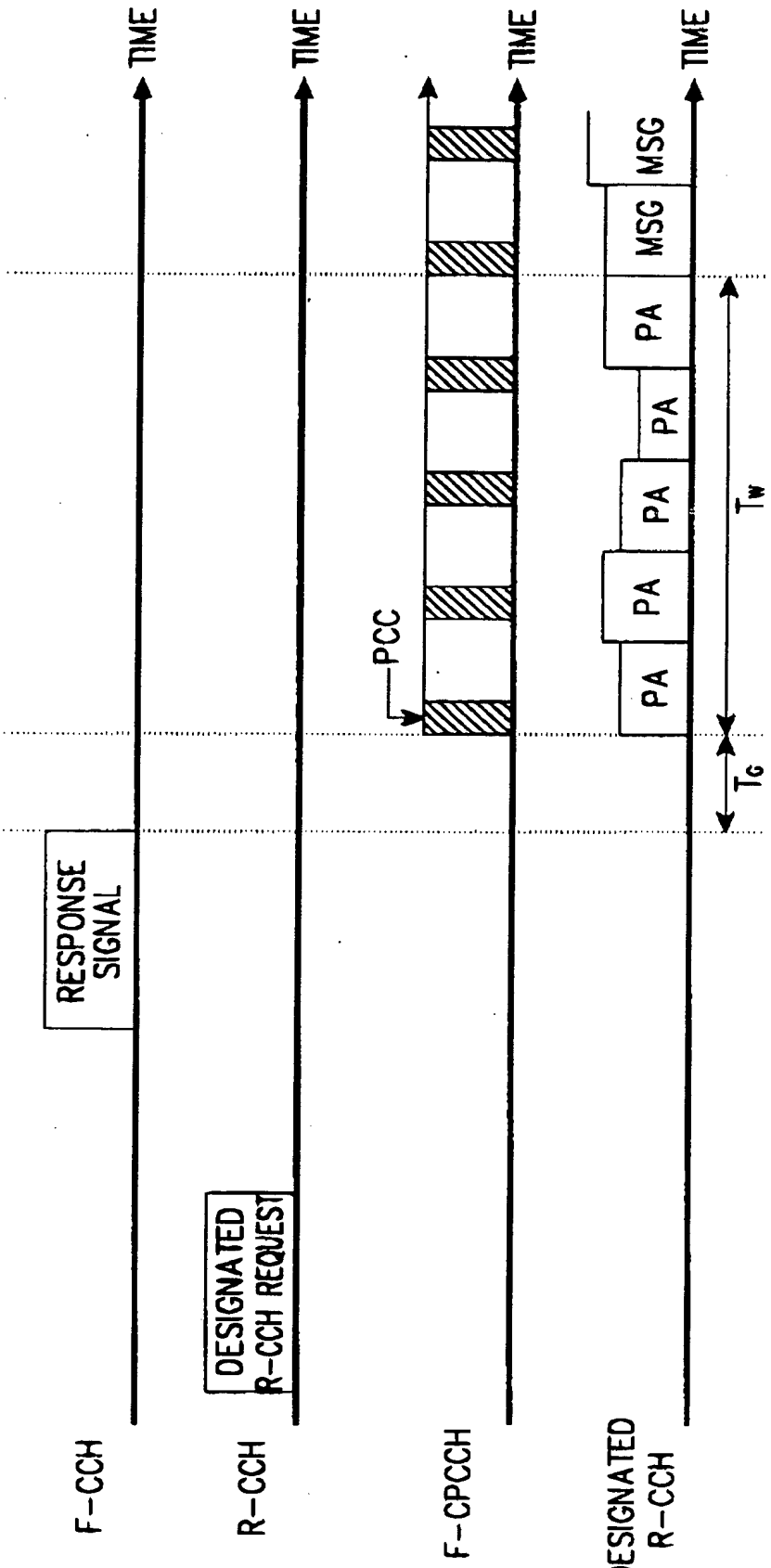
F-CCH
TIME
RESPONSE SIGNAL
R-CCH
TIME
DESIGNATED R-CCH REQUEST
F-CPCCH
TIME
PCC
DESIGNATED R-CCH
TIME
PA
PA
PA
PA
MSG
MSG
T_G
T_W

FIG. 10A

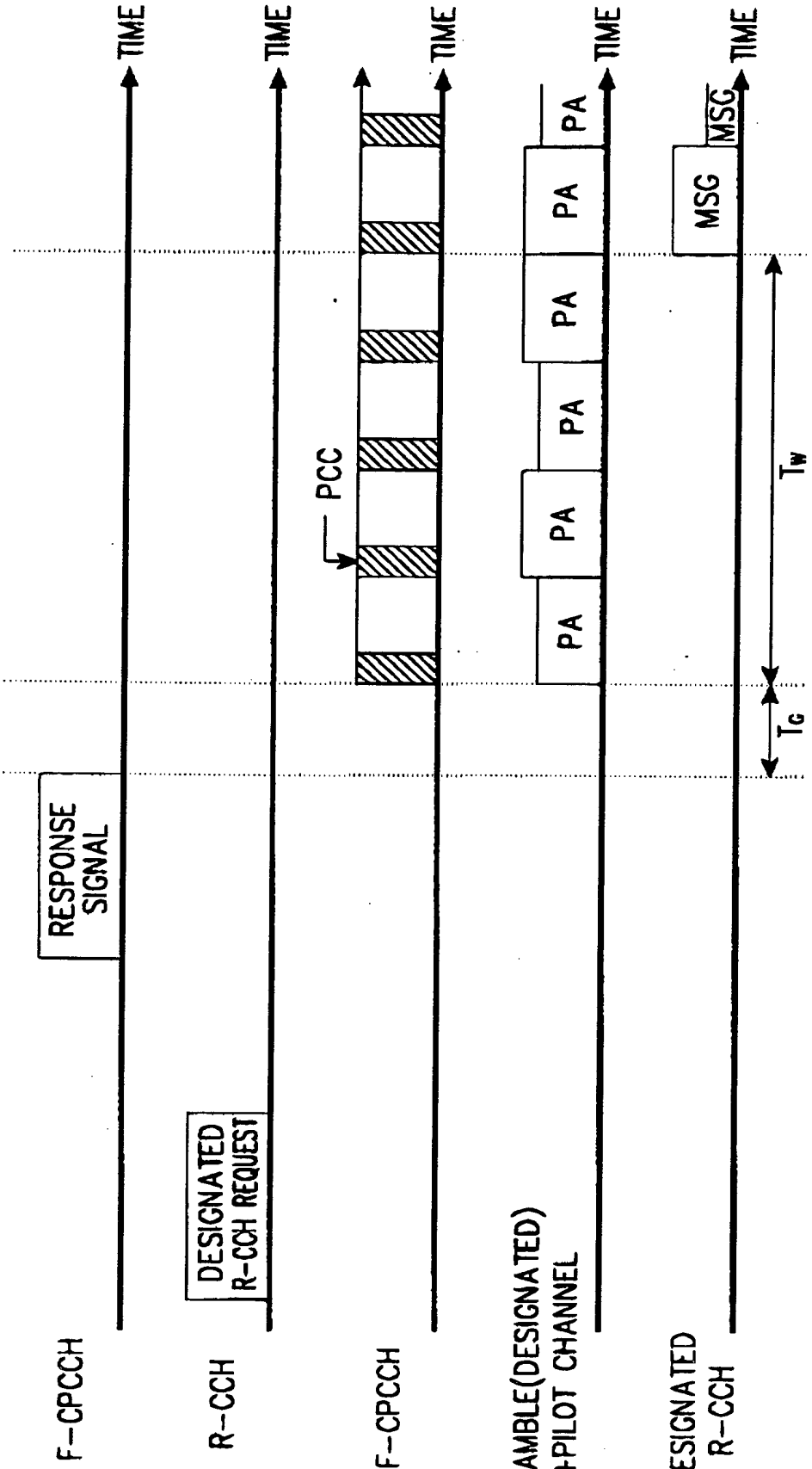
F-CPCCH
TIME
RESPONSE SIGNAL
R-CCH
TIME
DESIGNATED R-CCH REQUEST
F-CPCCH
TIME
PCC
PREAMBLE(DESIGNATED) +PILOT CHANNEL
TIME
PA
PA
PA
PA
PA
DESIGNATED R-CCH
TIME
MSG
MSG
T_W
T_G

FIG. 10B

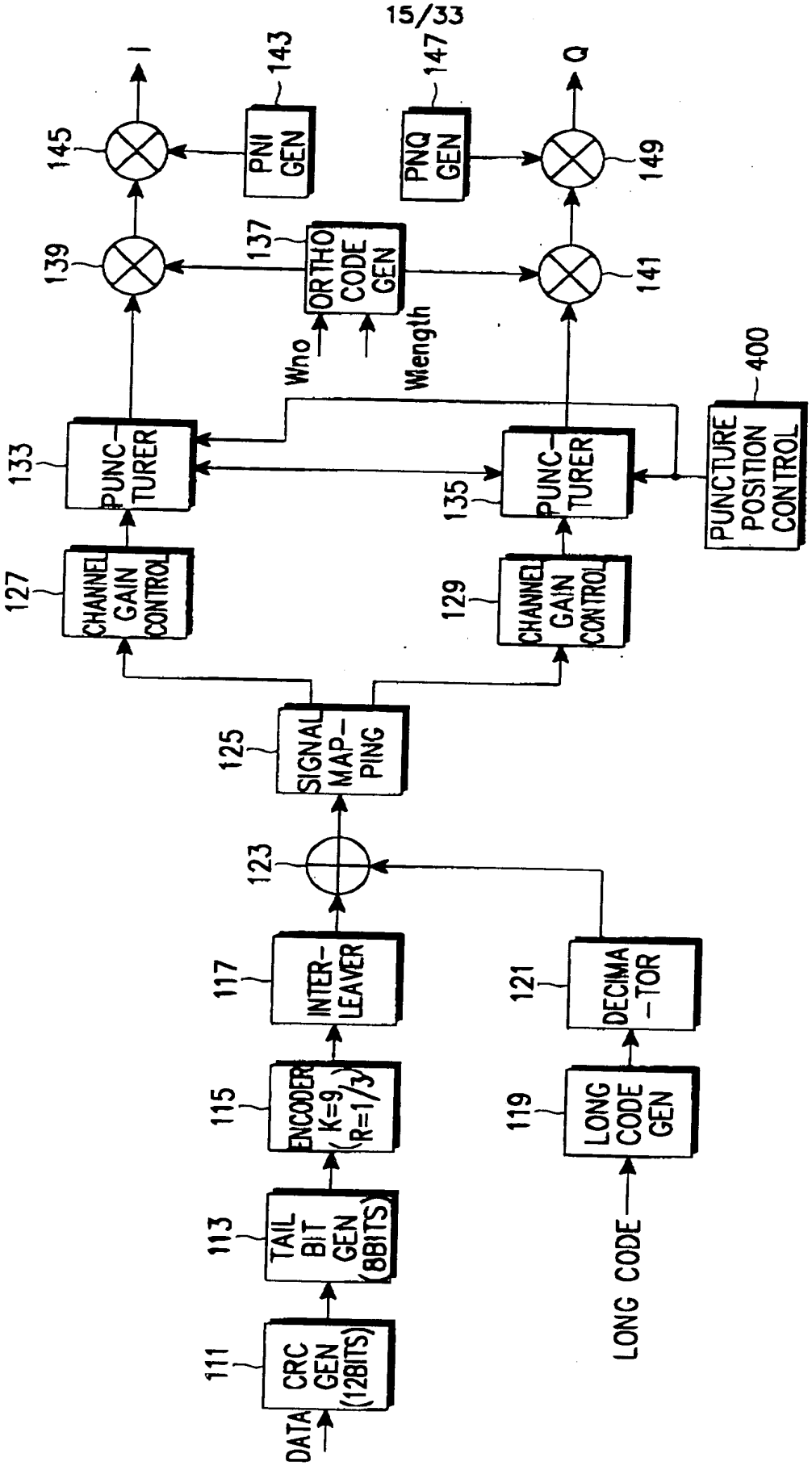
DATA
CRC GEN (12BITS)
111
TAIL BIT GEN (8BITS)
113
ENCODER K=9, R=1/3
115
INTER-LEAVER
117
LONG CODE
LONG CODE GEN
119
DECIMA-TOR
121
123
SIGNAL MAP-PING
125
CHANNEL GAIN CONTROL
127
CHANNEL GAIN CONTROL
129
PUNC-TURER
133
PUNC-TURER
135
PUNCTURE POSITION CONTROL
400
Wno
Wength
ORTHO CODE GEN
137
139
141
PNI GEN
143
145
PNQ GEN
147
149
I
Q

FIG. 11

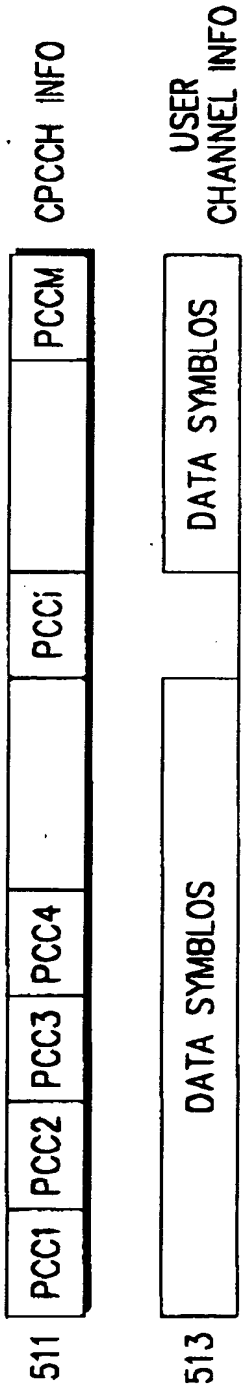
511
PCC1
PCC2
PCC3
PCC4
PCCi
PCCM
CPCCH INFO
513
DATA SYMBLOS
DATA SYMBLOS
USER CHANNEL INFO

FIG. 12

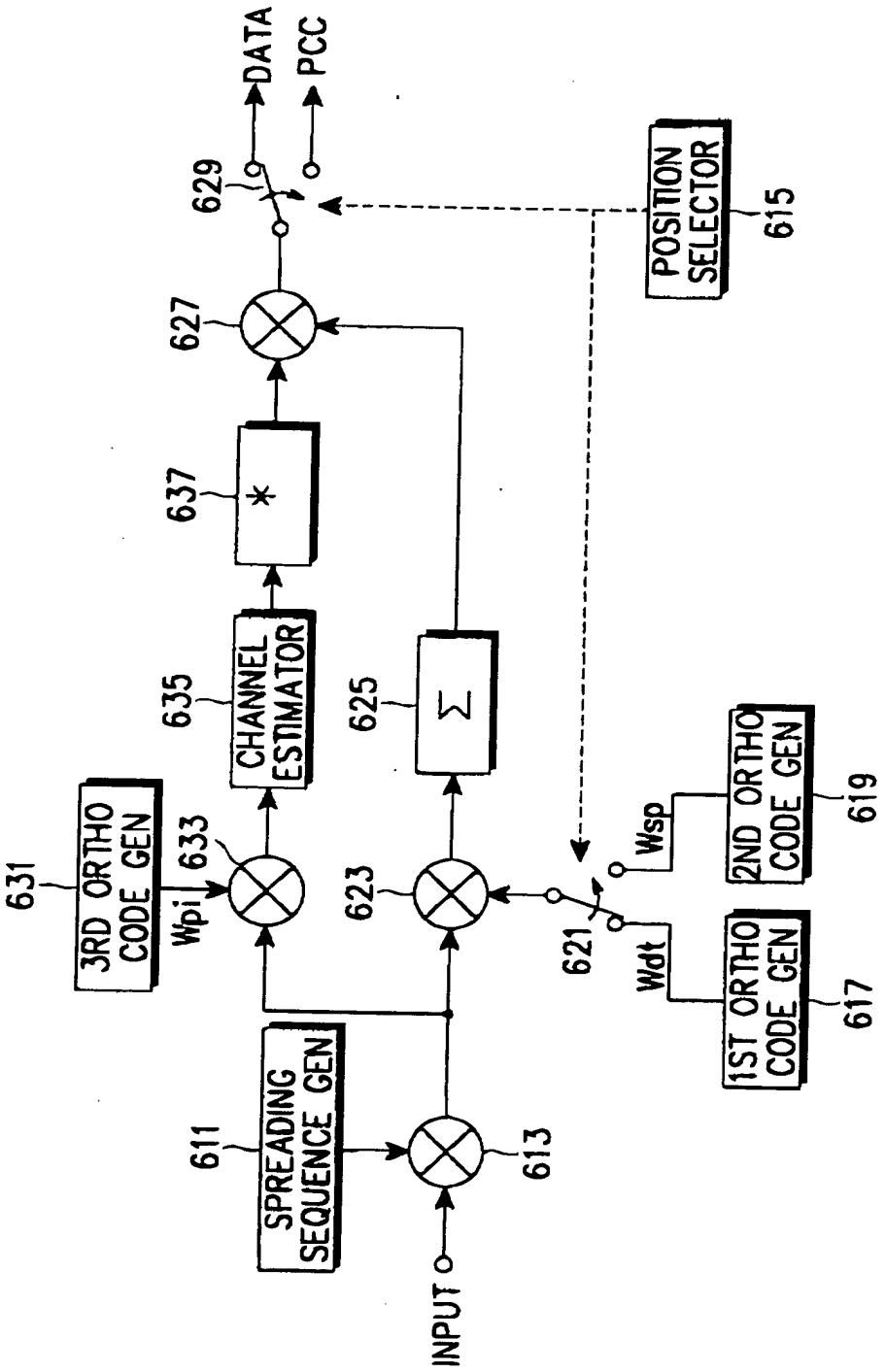
INPUT
SPREADING SEQUENCE GEN
611
613
3RD ORTHO CODE GEN
631
Wpi
633
CHANNEL ESTIMATOR
635
637
*
627
629
DATA
PCC
623
625
Σ
621
Wsp
2ND ORTHO CODE GEN
619
Wdt
1ST ORTHO CODE GEN
617
POSITION SELECTOR
615

FIG. 13

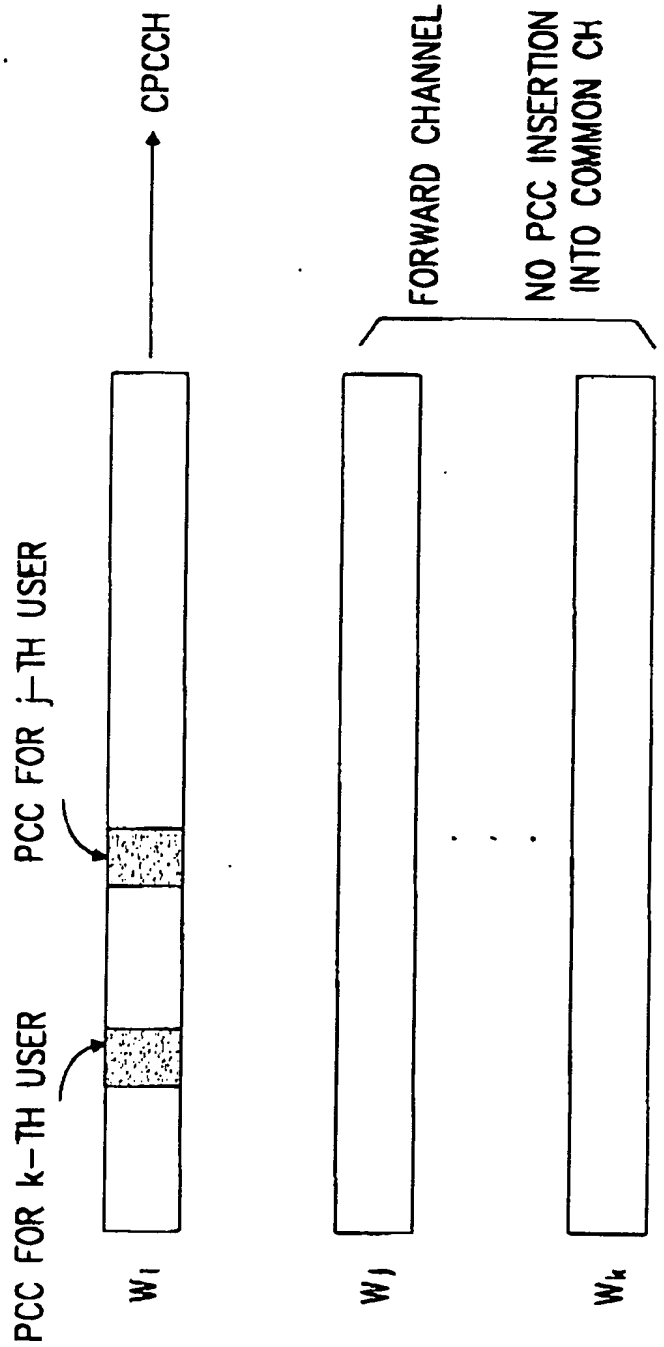
CPCCH
FORWARD CHANNEL
NO PCC INSERTION
INTO COMMON CH
PCC FOR j-TH USER
PCC FOR k-TH USER
W1
Wj
Wk

FIG. 14

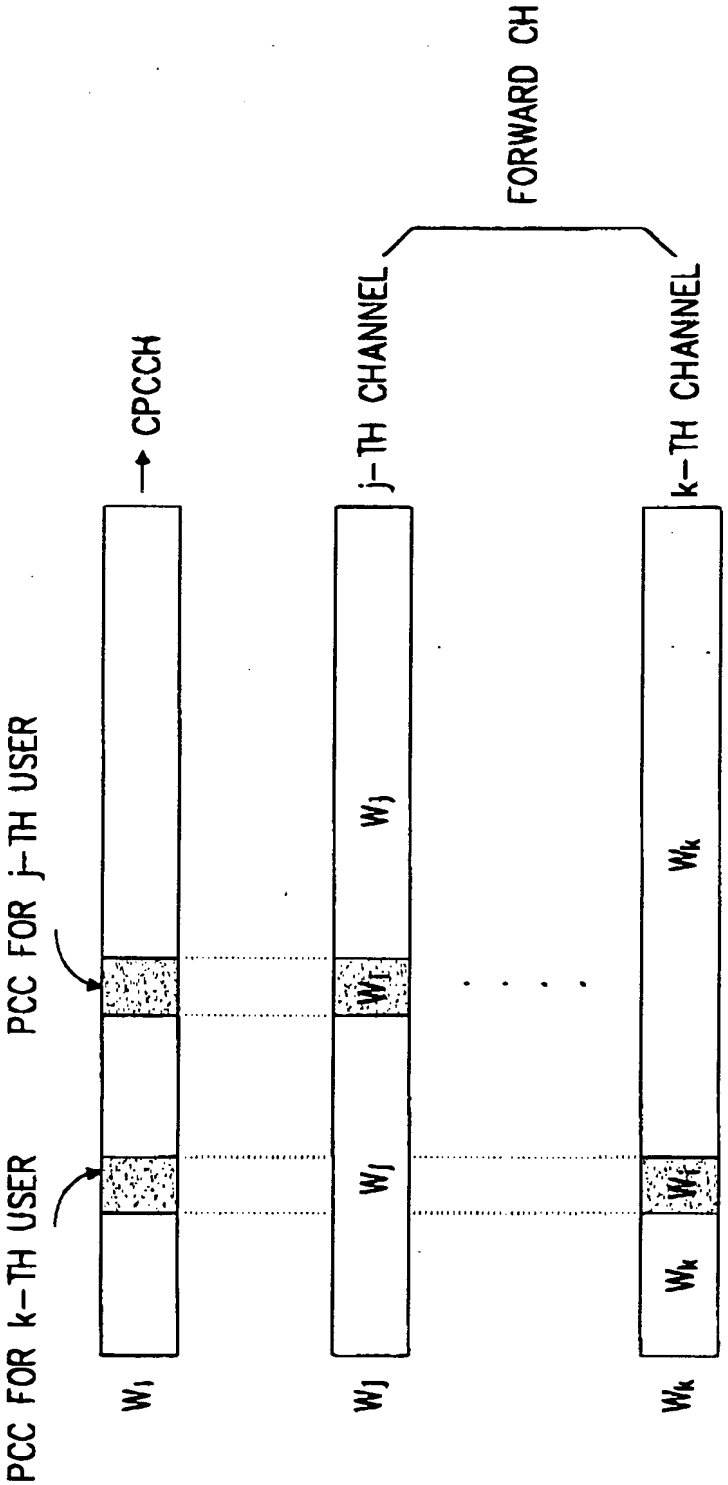
FORWARD CH
→ CPCCH
j-TH CHANNEL
k-TH CHANNEL
PCC FOR j-TH USER
PCC FOR k-TH USER
W1
WJ
Wk
Wj
Wk
Wj
Wk
Wj
Wk
W1
WJ
Wk

FIG. 15

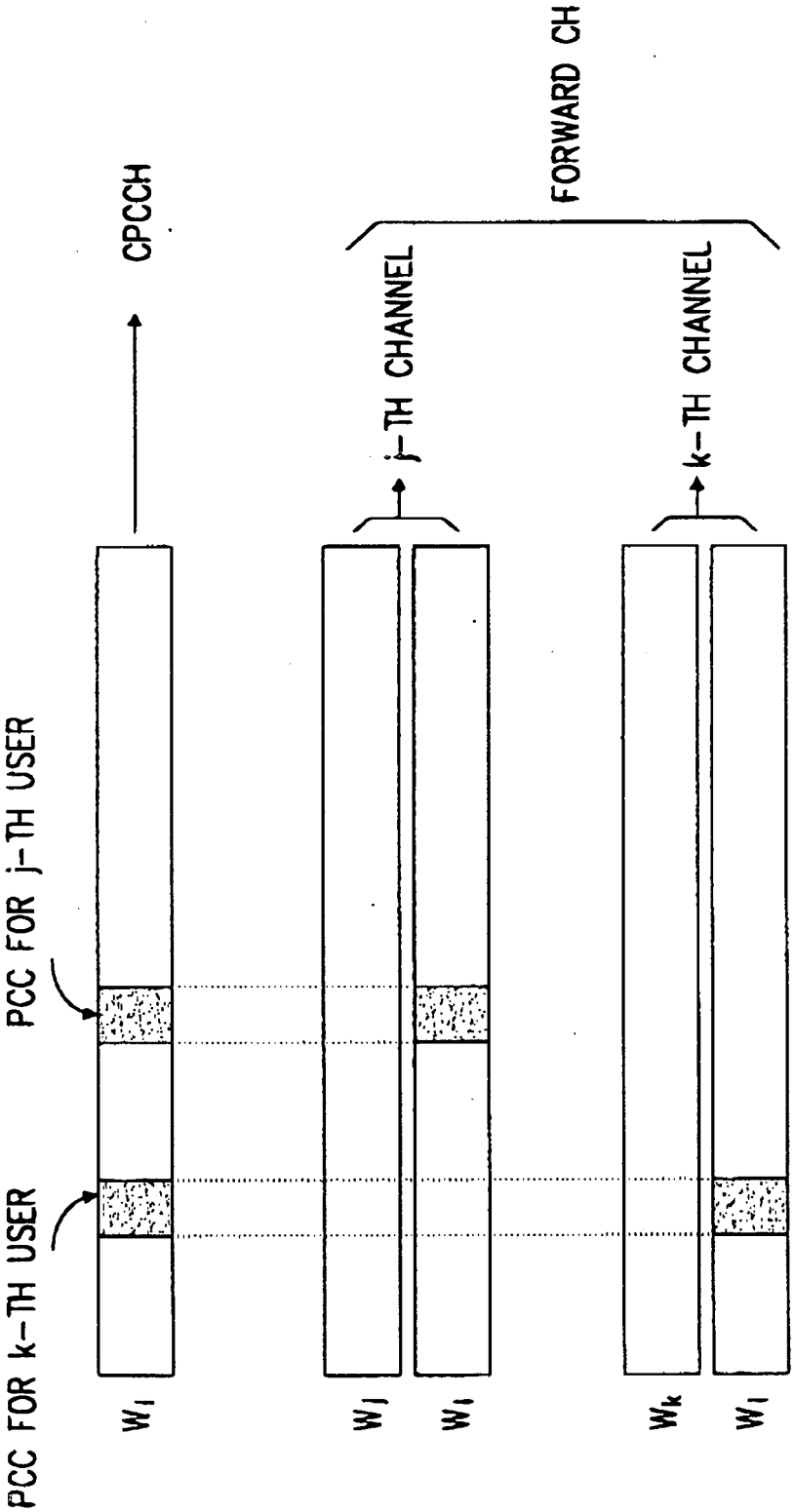
FORWARD CH
CPCCH
j-TH CHANNEL
k-TH CHANNEL
PCC FOR j-TH USER
PCC FOR k-TH USER
W1
WJ
W1
Wk
W1

FIG. 16

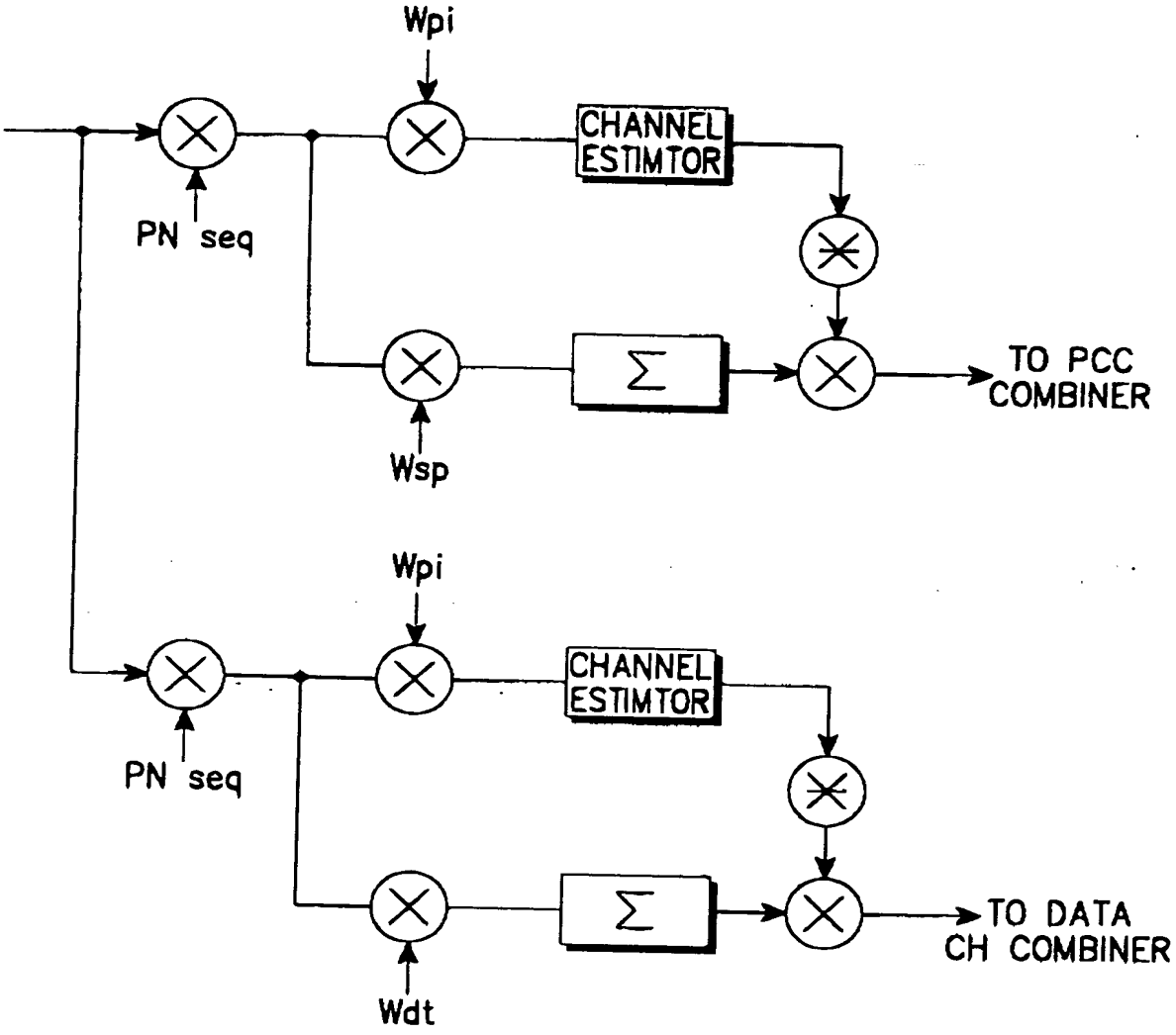
Wpi
CHANNEL ESTIMTOR
PN seq
Σ
TO PCC COMBINER
Wsp
Wpi
CHANNEL ESTIMTOR
PN seq
Σ
TO DATA CH COMBINER
Wdt

FIG. 17

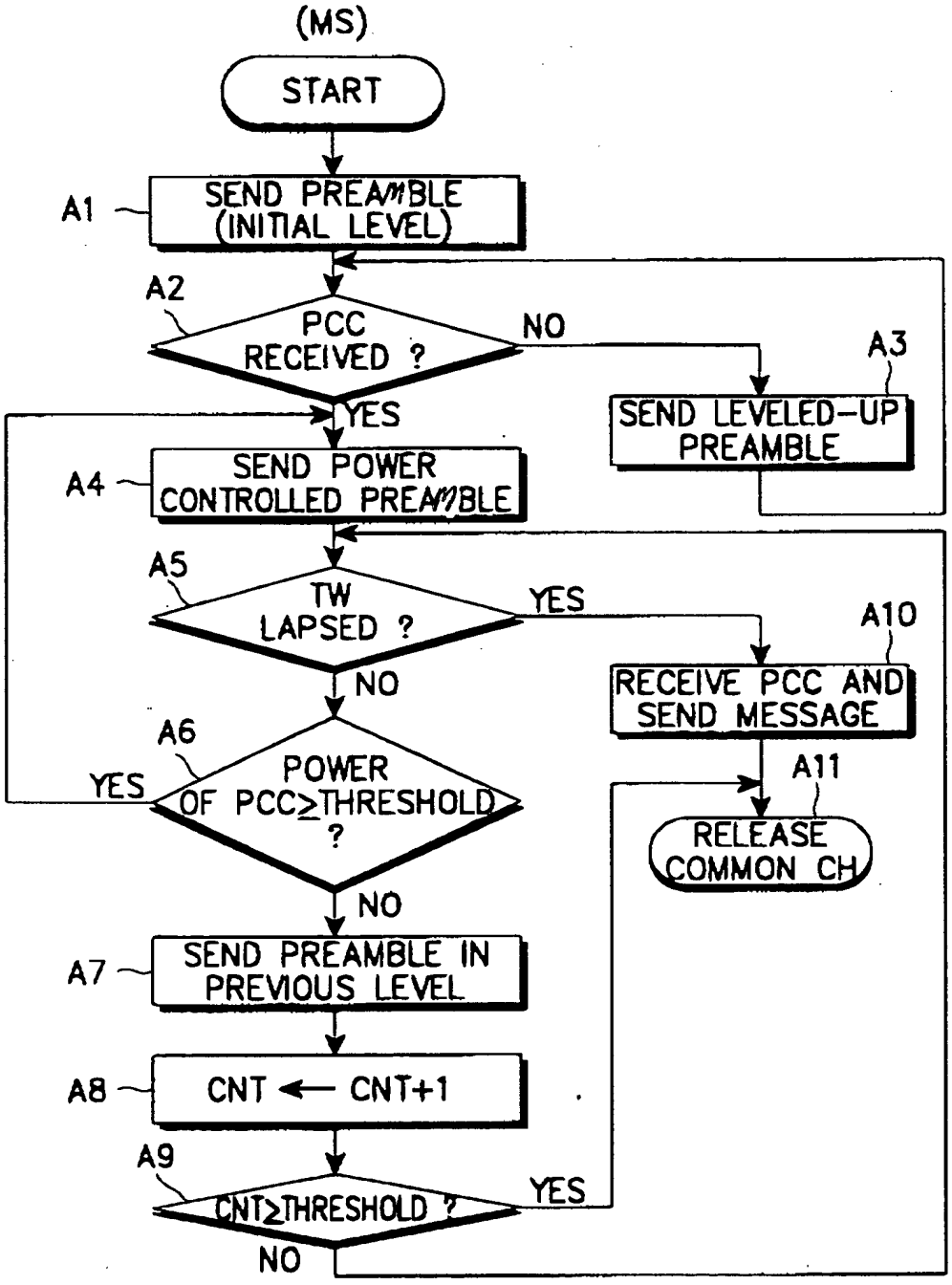
(MS)
START
A1
SEND PREAMBLE (INITIAL LEVEL)
A2
PCC RECEIVED ?
NO
A3
SEND LEVELED-UP PREAMBLE
YES
A4
SEND POWER CONTROLLED PREAMBLE
A5
TW LAPSED ?
YES
A10
RECEIVE PCC AND SEND MESSAGE
NO
A6
POWER OF PCC≥THRESHOLD ?
YES
A11
RELEASE COMMON CH
NO
A7
SEND PREAMBLE IN PREVIOUS LEVEL
A8
CNT ← CNT+1
A9
CNT≥THRESHOLD ?
YES
NO

FIG. 18A

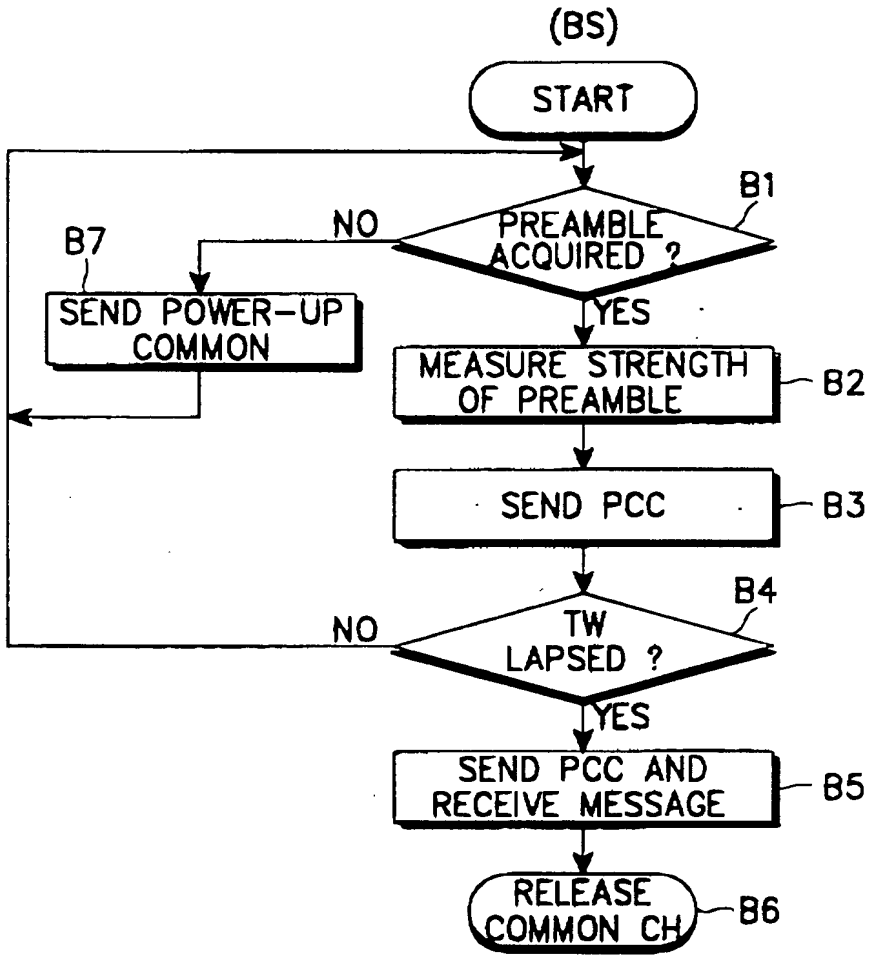
(BS)
START
B1
PREAMBLE ACQUIRED ?
NO
B7
SEND POWER-UP COMMON
YES
MEASURE STRENGTH OF PREAMBLE
B2
SEND PCC
B3
B4
TW LAPSED ?
NO
YES
SEND PCC AND RECEIVE MESSAGE
B5
RELEASE COMMON CH
B6

FIG. 18B

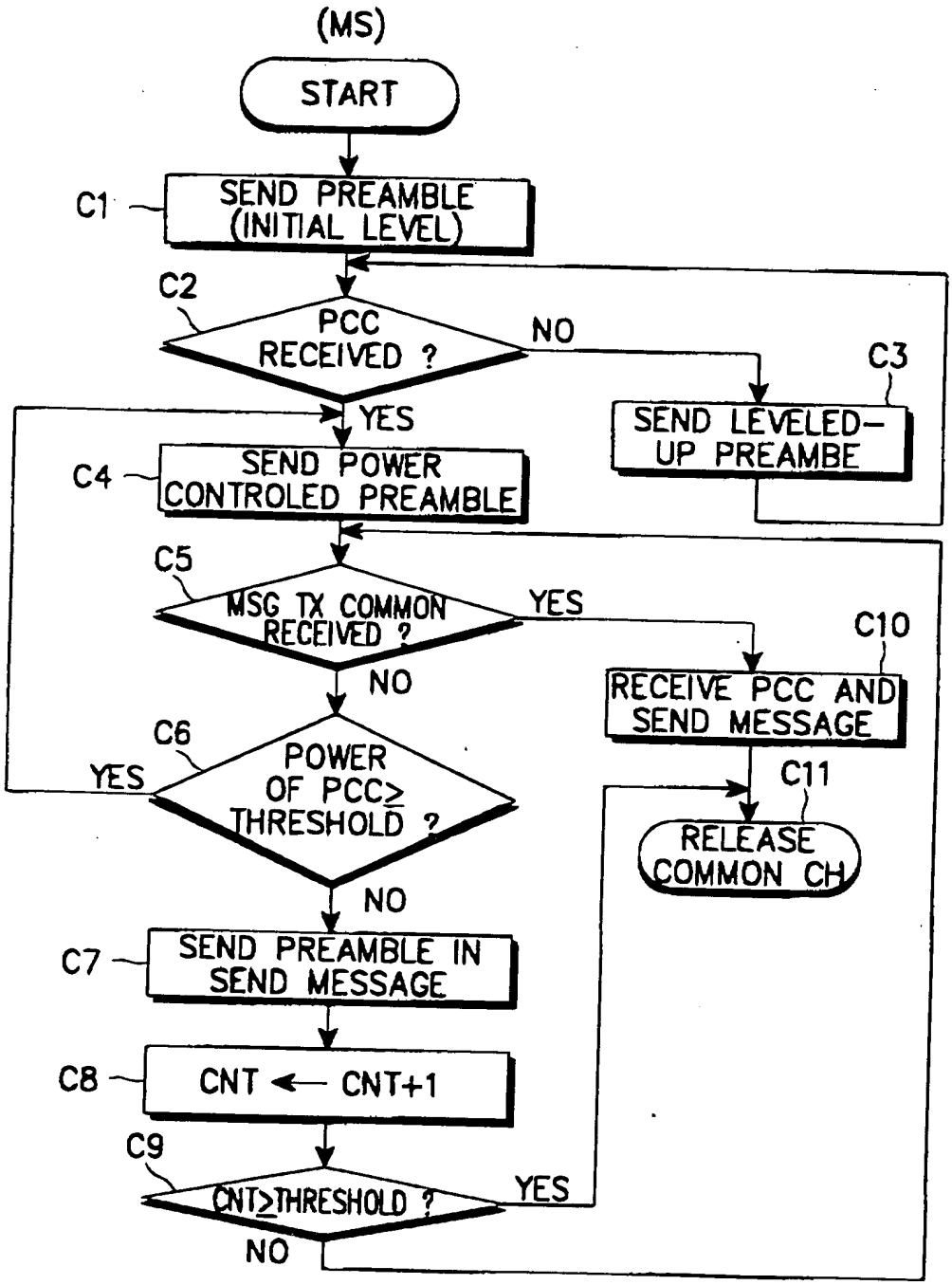
(MS)
START
C1
SEND PREAMBLE (INITIAL LEVEL)
C2
PCC RECEIVED ?
NO
C3
SEND LEVELED-UP PREAMBE
YES
C4
SEND POWER CONTROLED PREAMBLE
C5
MSG TX COMMON RECEIVED ?
YES
C10
RECEIVE PCC AND SEND MESSAGE
NO
C6
POWER OF PCC≥ THRESHOLD ?
YES
C11
RELEASE COMMON CH
NO
C7
SEND PREAMBLE IN SEND MESSAGE
C8
CNT ← CNT+1
C9
CNT≥THRESHOLD ?
YES
NO

FIG. 19A

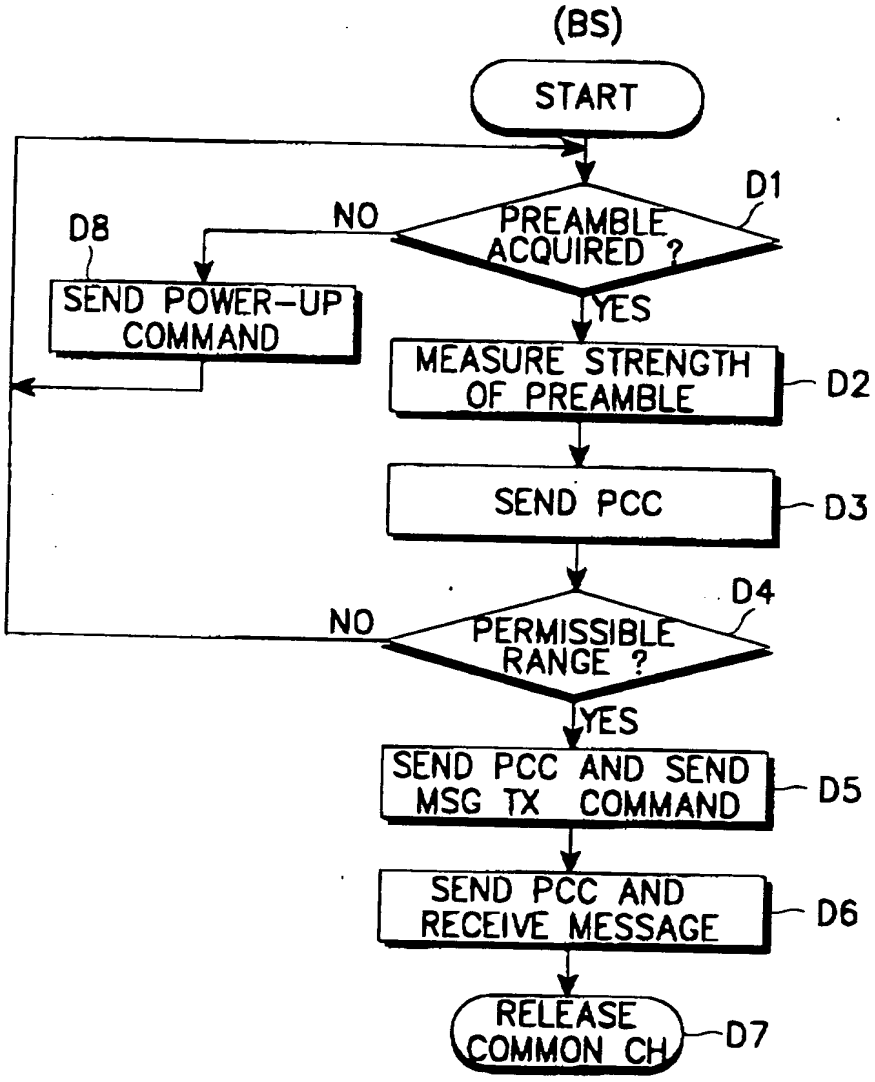
(BS)
START
D1
PREAMBLE ACQUIRED ?
NO
D8
SEND POWER-UP COMMAND
YES
MEASURE STRENGTH OF PREAMBLE
D2
SEND PCC
D3
D4
PERMISSIBLE RANGE ?
NO
YES
SEND PCC AND SEND MSG TX COMMAND
D5
SEND PCC AND RECEIVE MESSAGE
D6
RELEASE COMMON CH
D7

FIG. 19B

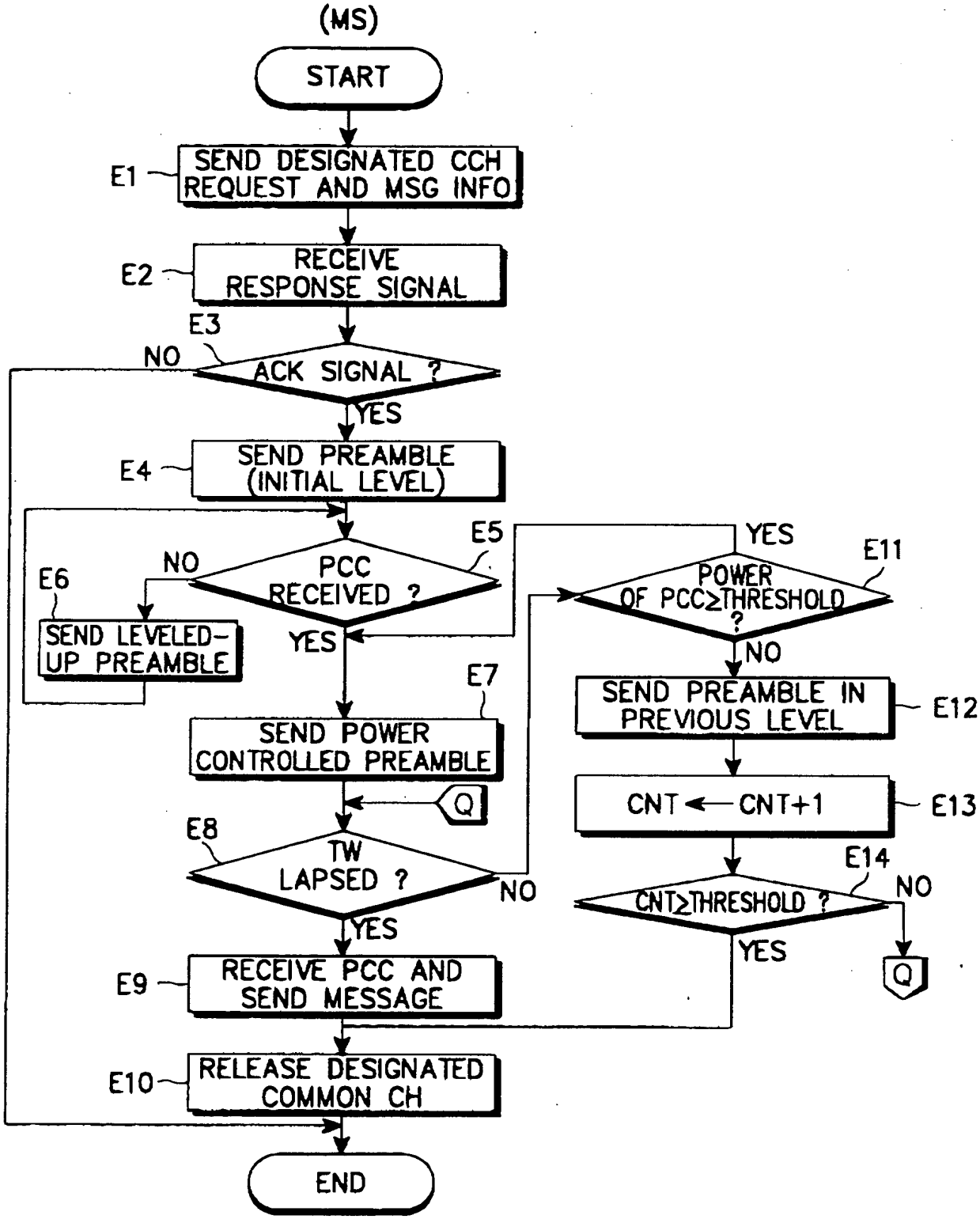
(MS)
START
E1
SEND DESIGNATED CCH REQUEST AND MSG INFO
E2
RECEIVE RESPONSE SIGNAL
E3
NO
ACK SIGNAL ?
YES
E4
SEND PREAMBLE (INITIAL LEVEL)
E5
YES
NO
PCC RECEIVED ?
E6
SEND LEVELED-UP PREAMBLE
YES
E7
SEND POWER CONTROLLED PREAMBLE
Q
E8
TW LAPSED ?
NO
YES
E9
RECEIVE PCC AND SEND MESSAGE
E10
RELEASE DESIGNATED COMMON CH
END
E11
YES
POWER OF PCC≥THRESHOLD ?
NO
E12
SEND PREAMBLE IN PREVIOUS LEVEL
E13
CNT ← CNT+1
E14
CNT≥THRESHOLD ?
NO
YES
Q

FIG. 20A

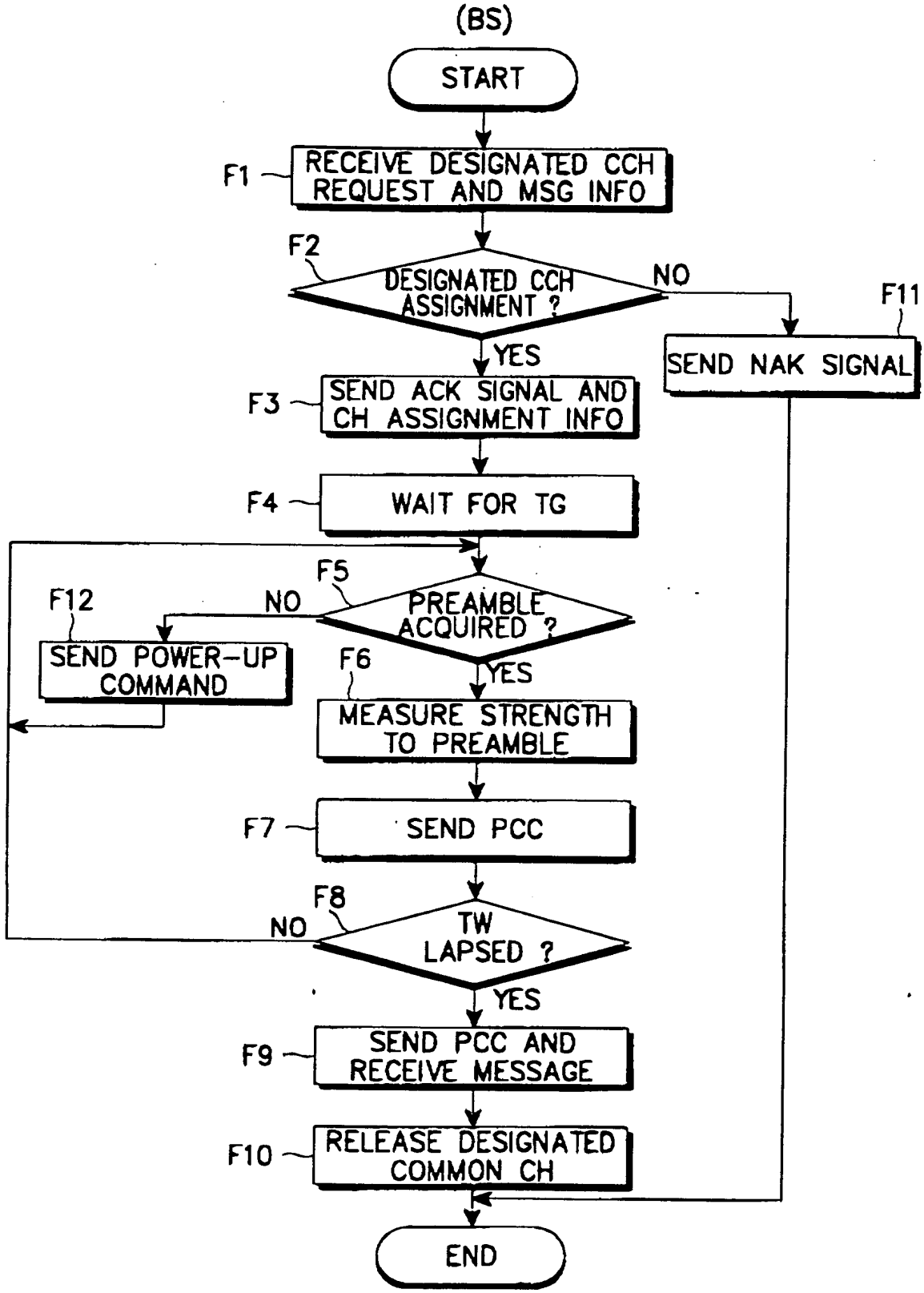
(BS)
START
F1
RECEIVE DESIGNATED CCH REQUEST AND MSG INFO
F2
DESIGNATED CCH ASSIGNMENT ?
NO
F11
SEND NAK SIGNAL
YES
F3
SEND ACK SIGNAL AND CH ASSIGNMENT INFO
F4
WAIT FOR TG
F5
PREAMBLE ACQUIRED ?
F12
NO
SEND POWER-UP COMMAND
F6
YES
MEASURE STRENGTH TO PREAMBLE
F7
SEND PCC
F8
TW LAPSED ?
NO
YES
F9
SEND PCC AND RECEIVE MESSAGE
F10
RELEASE DESIGNATED COMMON CH
END

FIG. 20B

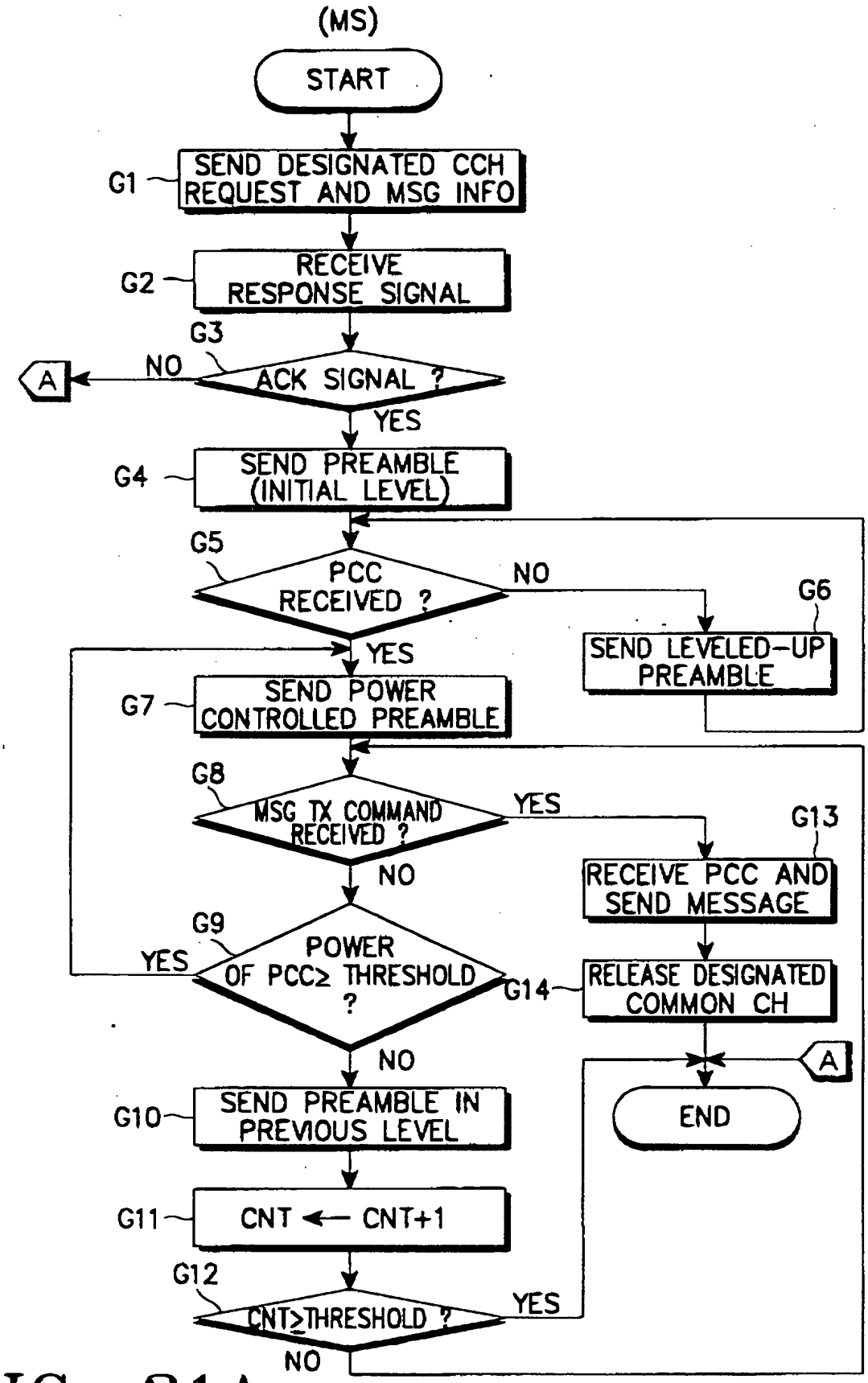
(MS)
START
G1
SEND DESIGNATED CCH REQUEST AND MSG INFO
G2
RECEIVE RESPONSE SIGNAL
G3
ACK SIGNAL ?
NO
A
YES
G4
SEND PREAMBLE (INITIAL LEVEL)
G5
PCC RECEIVED ?
NO
G6
SEND LEVELED-UP PREAMBLE
YES
G7
SEND POWER CONTROLLED PREAMBLE
G8
MSG TX COMMAND RECEIVED ?
YES
G13
RECEIVE PCC AND SEND MESSAGE
NO
G9
POWER OF PCC≥ THRESHOLD ?
YES
G14
RELEASE DESIGNATED COMMON CH
NO
A
END
G10
SEND PREAMBLE IN PREVIOUS LEVEL
G11
CNT ← CNT+1
G12
CNT≥THRESHOLD ?
YES
NO

FIG. 21A

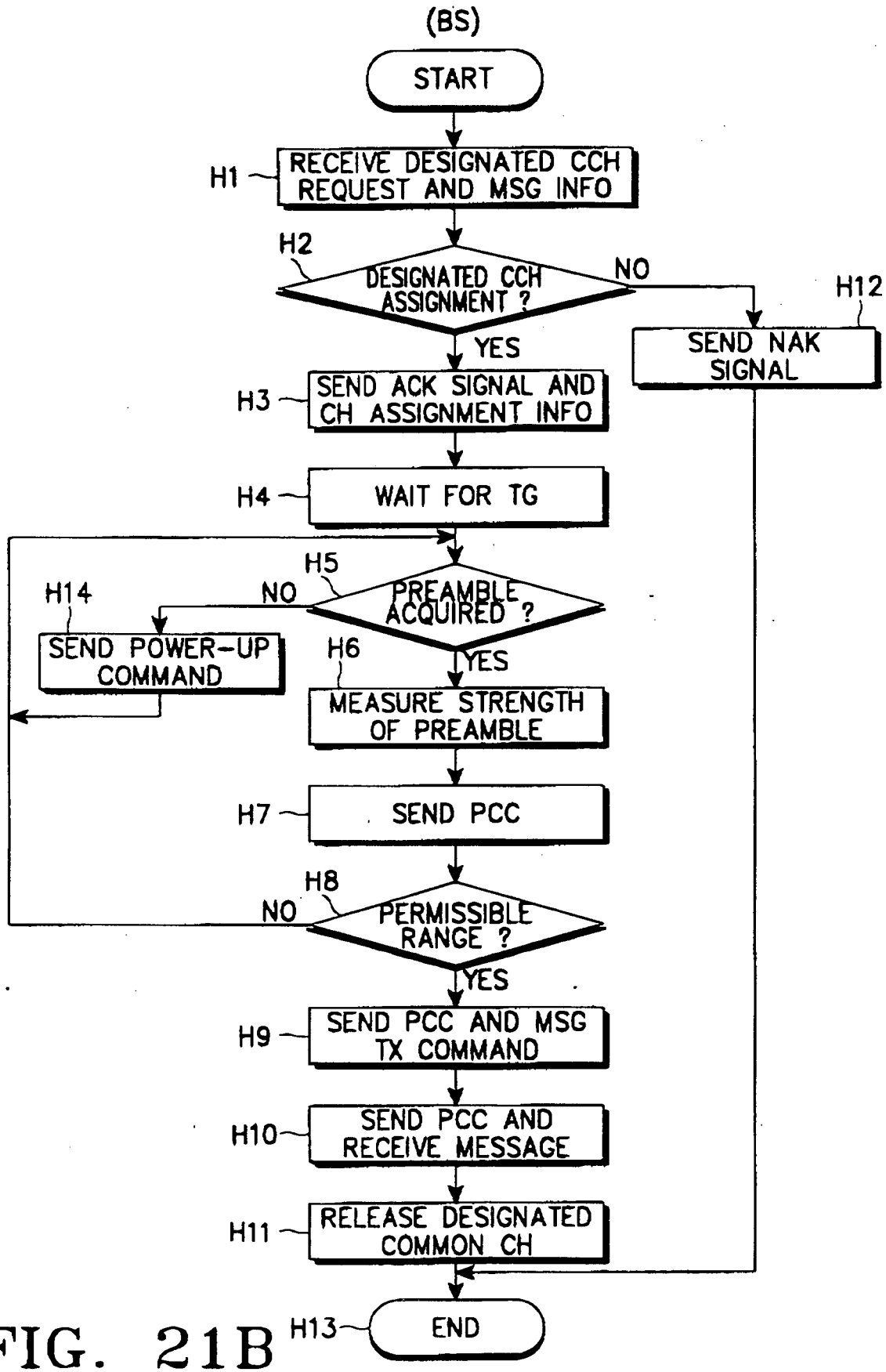
(BS)
START
H1
RECEIVE DESIGNATED CCH REQUEST AND MSG INFO
H2
DESIGNATED CCH ASSIGNMENT ?
NO
H12
SEND NAK SIGNAL
YES
H3
SEND ACK SIGNAL AND CH ASSIGNMENT INFO
H4
WAIT FOR TG
H5
PREAMBLE ACQUIRED ?
NO
H14
SEND POWER-UP COMMAND
YES
H6
MEASURE STRENGTH OF PREAMBLE
H7
SEND PCC
H8
PERMISSIBLE RANGE ?
NO
YES
H9
SEND PCC AND MSG TX COMMAND
H10
SEND PCC AND RECEIVE MESSAGE
H11
RELEASE DESIGNATED COMMON CH
H13
END

FIG. 21B

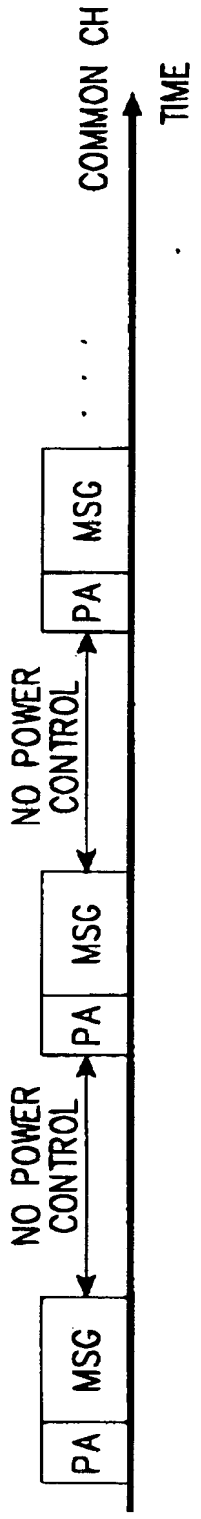

FIG. 22A

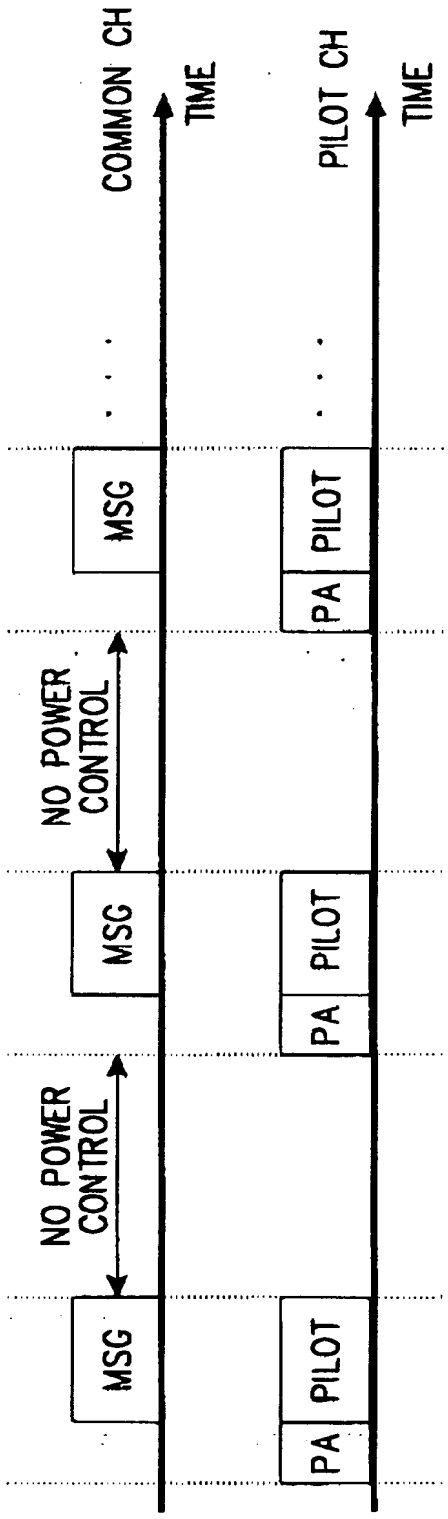

FIG. 22B

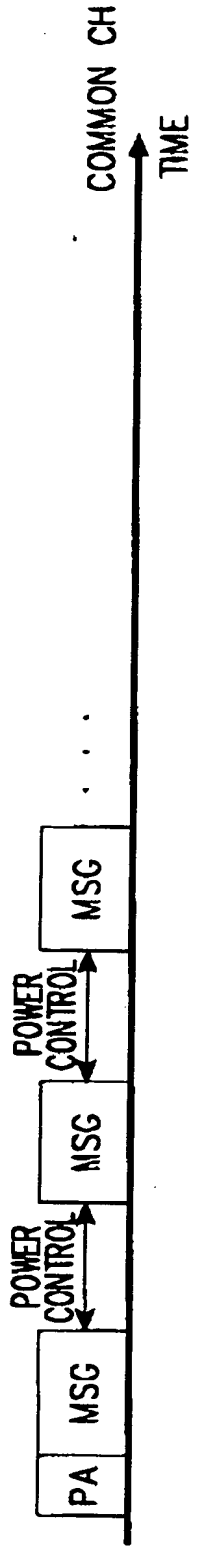

FIG. 23A

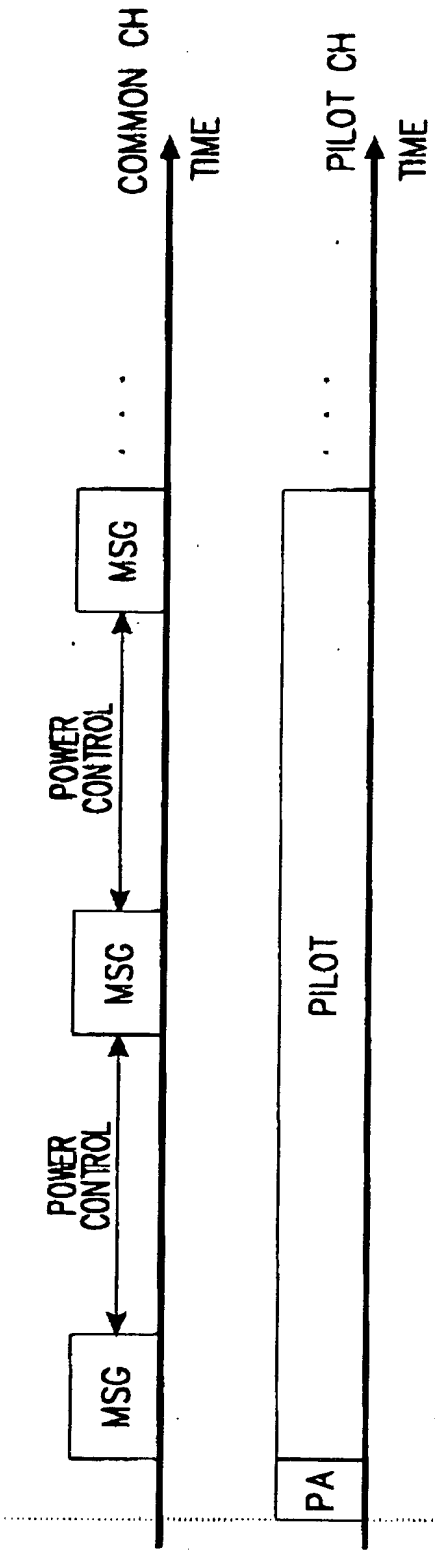

FIG. 23B

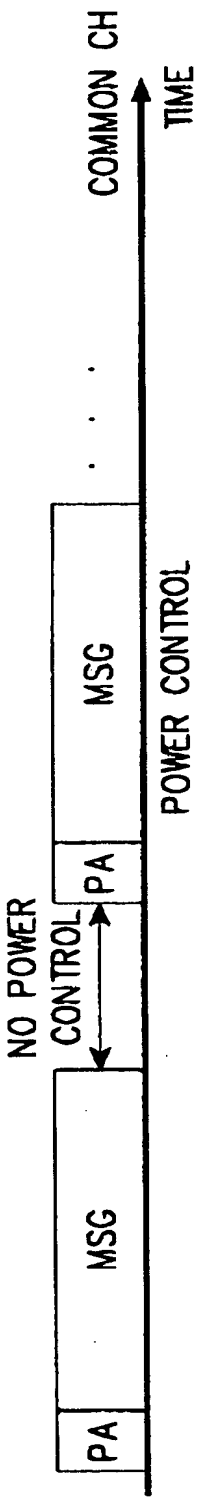

FIG. 24A

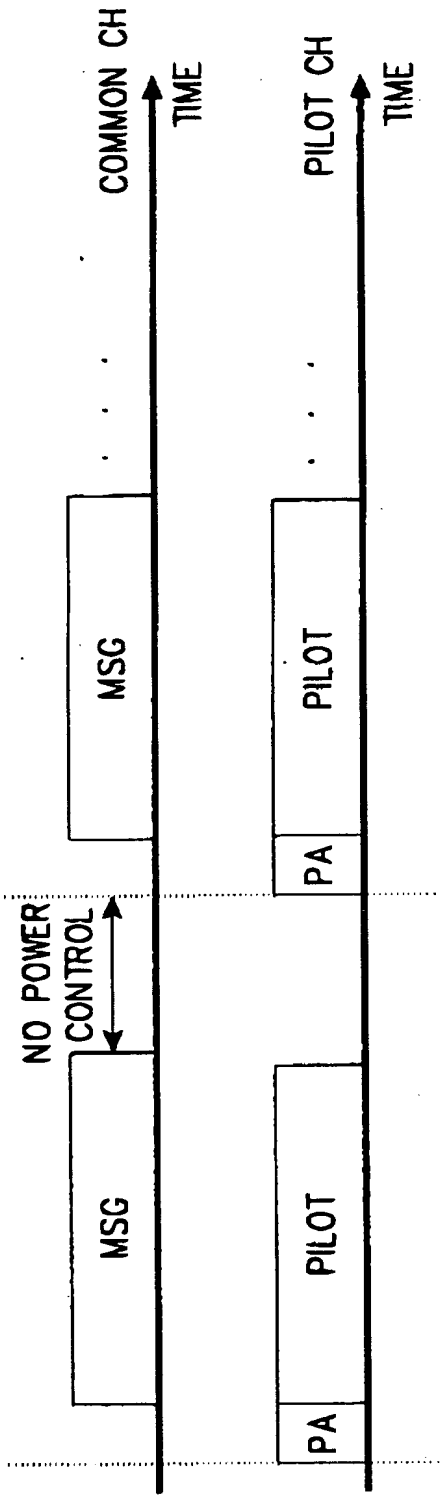

FIG. 24B

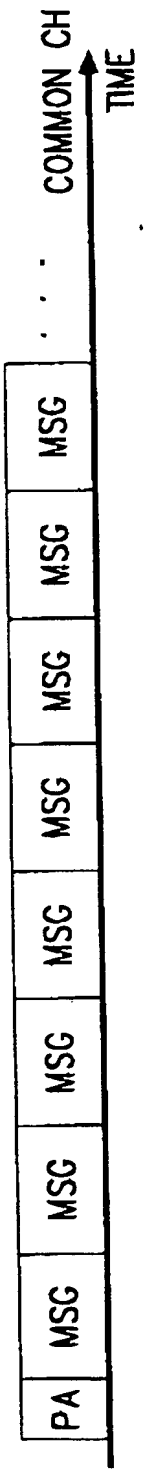

FIG. 25A

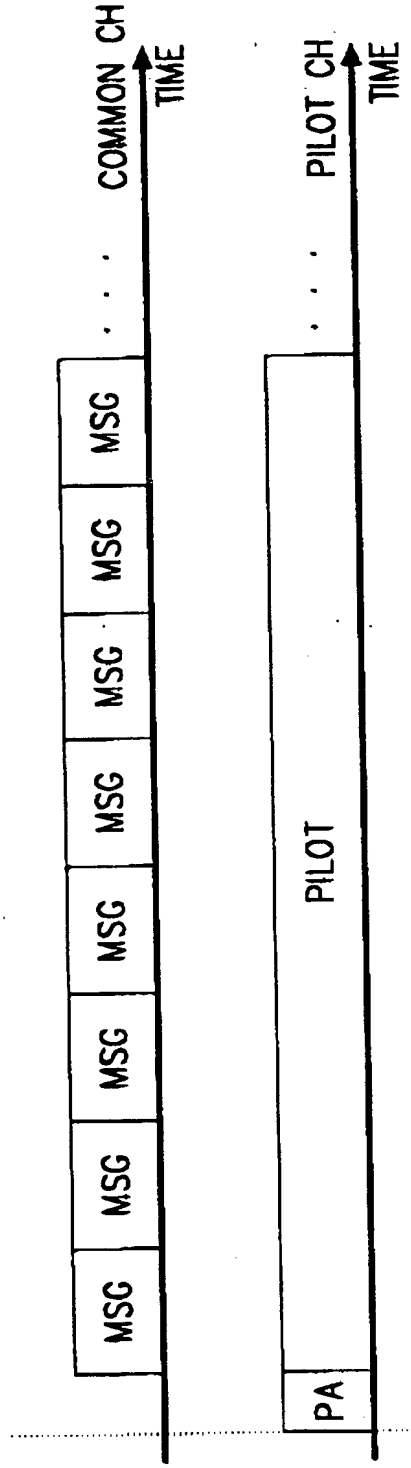

FIG. 25B